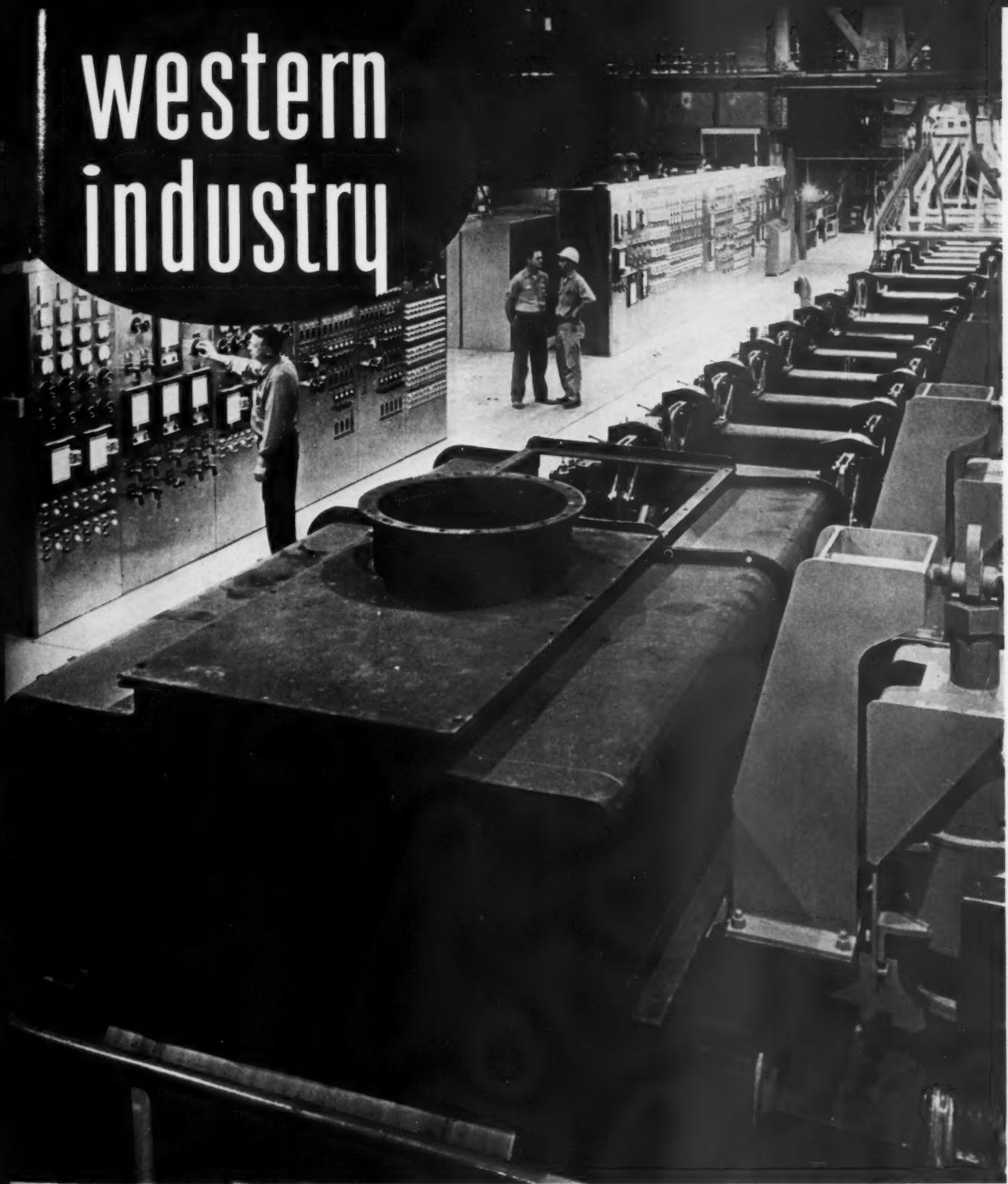


# western industry

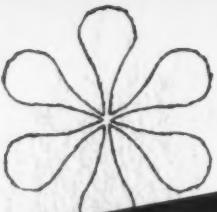


SEPTEMBER 1959



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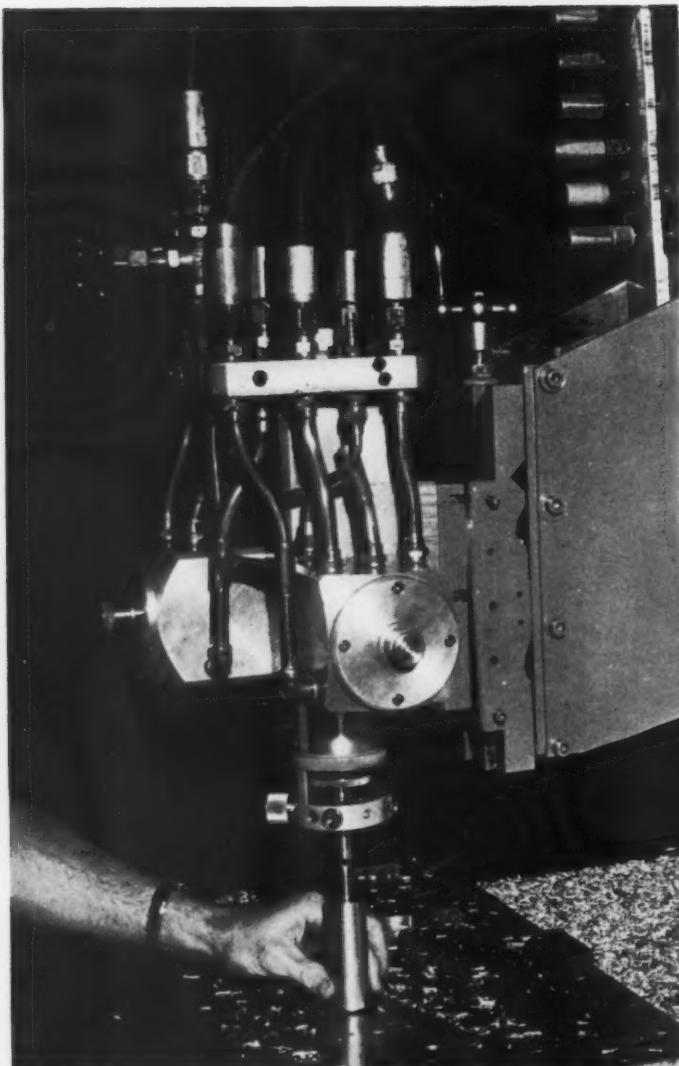
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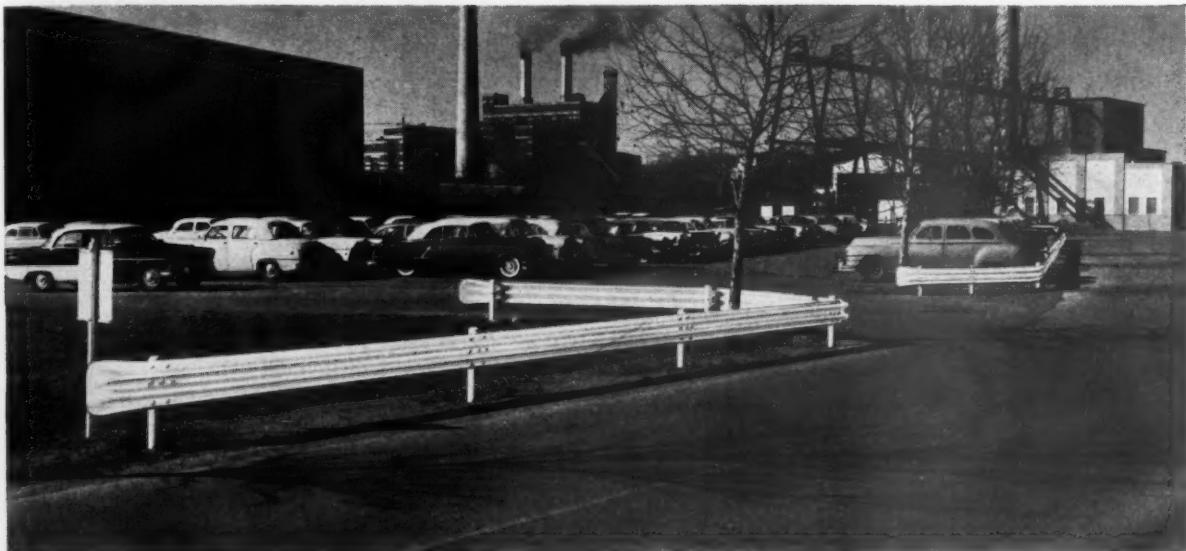
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SEPTEMBER 1959

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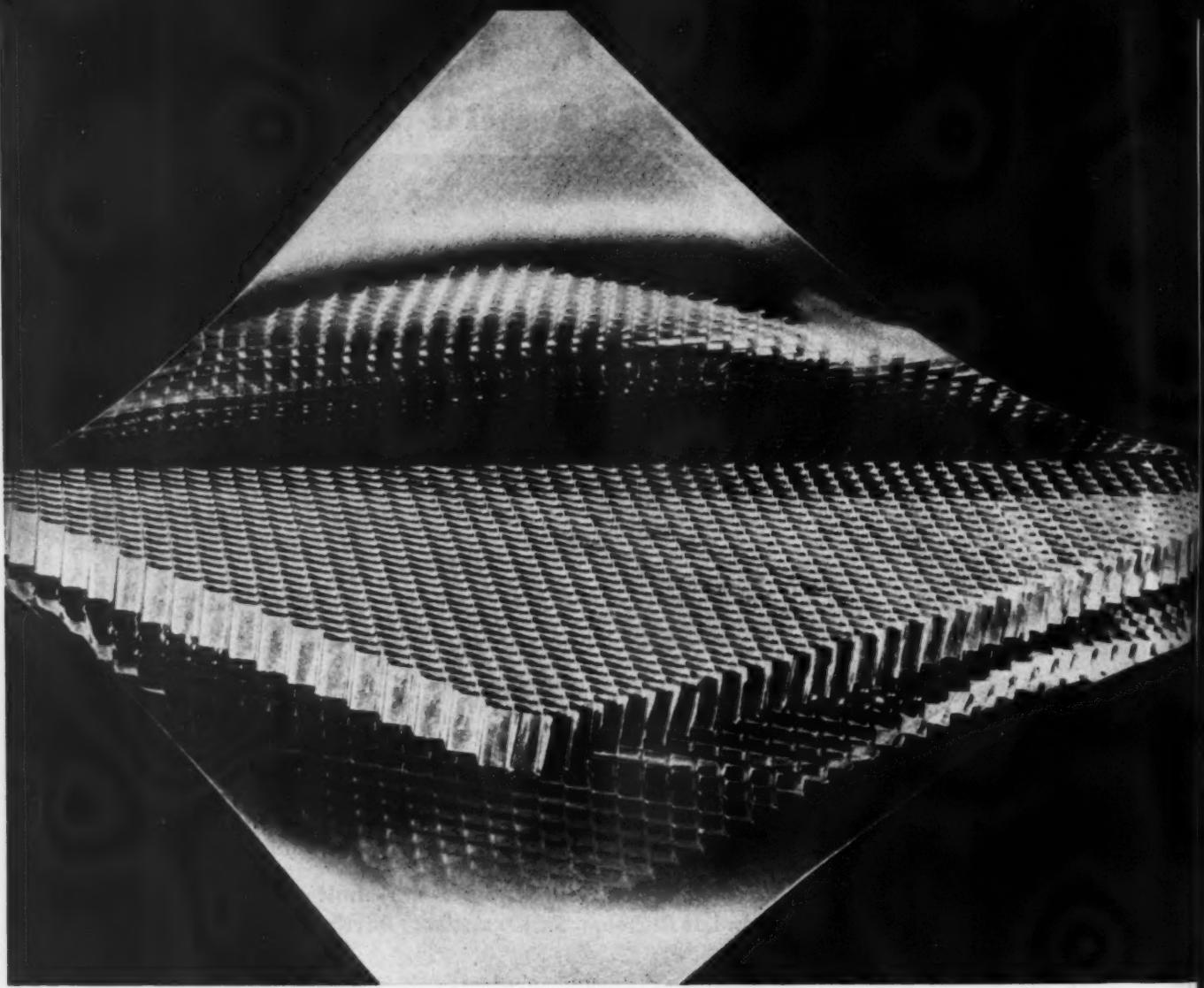
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WESTERN INDUSTRY/SEPTEMBER 1959



## Consult your AIM\*... Real Fresh Milk did... **Steel Strapping Machine speeds packaging**

**REAL FRESH MILK, INC., VISALIA, CALIFORNIA,** processors of milk and milk products sought a better way of applying steel strapping reinforcement to containers. Their Acme Idea Man provided the solution through the Acme Steel F1 strapping machine. (Idea No. S1-9)

Now one man easily operates this strapping station. With maximum speed and finger-tip controls, the F1 tensions the strap, cuts it and welds the ends together. This installation provides continuous flow with no backlog of containers waiting to be strapped. Steel strapped boxes provide better product protection during shipping and handling, and this pleased user found the F1 doubled package output.

\*Consult your **Acme Idea Man**. Let him help solve your packaging problems. Call him or write Dept. WCS-99, Acme Steel Products Division, Acme Steel Company, 4001 Pacific Blvd., Los Angeles 58, California. Also San Francisco, Seattle and Portland.

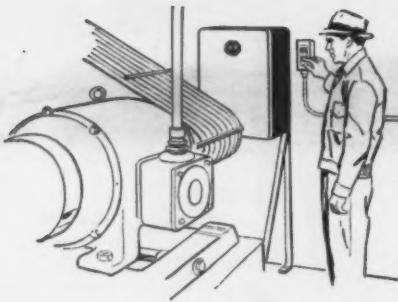
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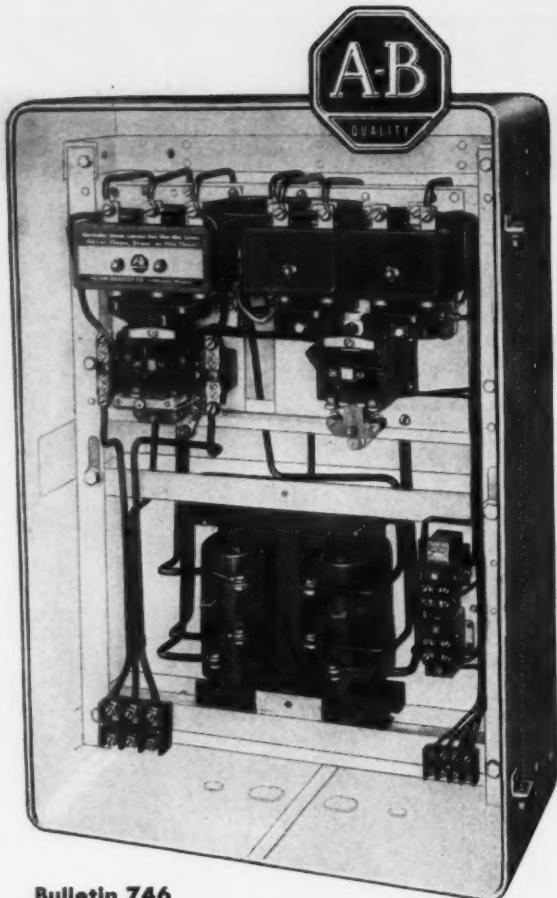


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The Allen-Bradley line of reduced voltage starters makes possible a selection of the best starter, not only to meet the power company's requirements but also to provide the best starting conditions for the motor and the "load" that it drives.

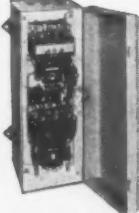
The simple solenoid contactors in A-B reduced voltage starters have only ONE moving part—assuring millions of trouble free operations. And their double break, silver alloy contacts never need costly maintenance. Accurate, reliable overload relays protect motors against burnouts. Write for Publication 6088.



### Bulletin 746

Automatic reduced voltage starter for squirrel cage motors that should not be started on full line voltage. It employs auto-transformer connected in open delta to reduce line voltage during starting. Adjustable timing relay controls starting period. Taps are provided on the autotransformer to adjust the starting voltage applied to the motor. Maximum ratings to 300 hp, 220 v; 600 hp, 440-550 v.

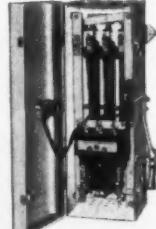
### Bulletin 740



Graphite disc resistors are automatically inserted in series with the squirrel cage motor at starting, and they are automatically cut out after a pre-determined time. Turning a single screw on the starter frame adjusts the compression resistors exactly to motor and load conditions for velvet smooth acceleration. Ratings to 200 hp, 220-440-550 v.

### Bulletin 640

Where remote control is not needed, these graphite compression disc resistor starters provide stepless acceleration of squirrel cage motors. Operated by hand lever, the smooth starting of the motor is under the control of the operator. No-voltage and dependable overload protection is provided. Ratings to 200 hp, 220-440-550 v.



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WESTERN INDUSTRY/SEPTEMBER 1959

## STANDARD ENGINEER'S REPORT



# Close tolerances... yet Chevron Cutting Oil increases cutting speeds and tool life

When tapping speeds increase, inferior thread quality and faster chaser wear are the usual results . . . but not always!

**Lakewood Pipe Coupling and Service**, Bellflower, Calif., found they could increase thread tapping speeds with Chevron Cutting Oil 210 TA and still meet API Class 3 tolerances.

"We not only cut smoother threads at higher speeds," reports President Frank Tybus, "but chasers last longer, too!"

We experimented a lot before we settled on Chevron Cutting Oil. That was five years ago . . . we're still using it. We've tried other products from time to time, but we've yet to find anything else that does as good a job for us on this thread tapping operation."

**Equipment note:** This Stamets tapping machine (above) cuts threads in mild steel 8-inch pipe couplings in less than 3 minutes using Chevron Cutting Oil. Machine uses Landis circular chasers.

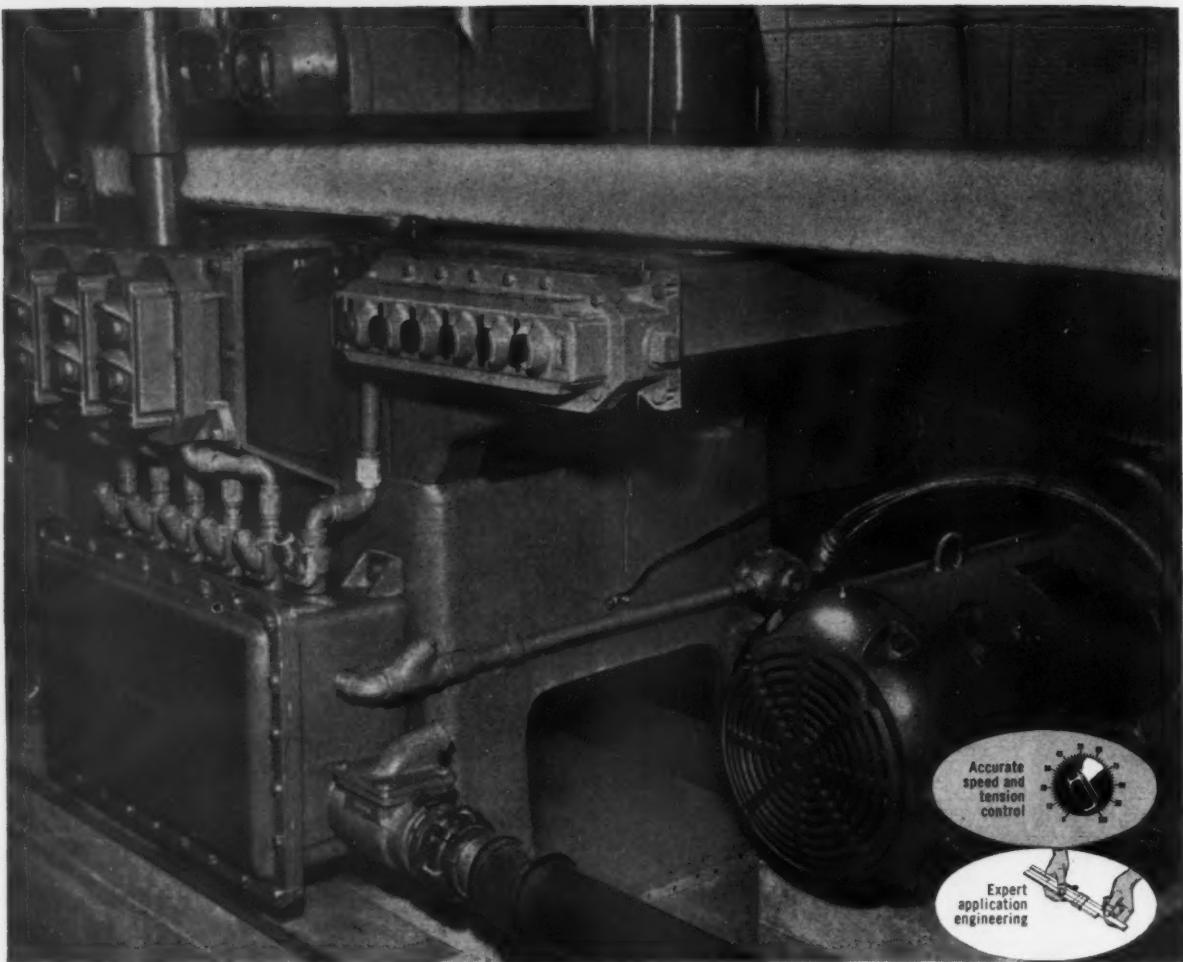
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How many pieces of equipment do you have that pay for themselves in 16 working days? That's the type of return the above Louis Allis Select-A-Spede drive brings through precise speed and tension control for continuous extrusion of plastic-foam "logs."

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trimmed off — none of the salable material winds up on the cutting room floor.

Select-A-Spede can boost your production, improve quality, and cut costs whether you're processing delicate paper tissue or wire cable — whether it controls individual drives or precision-matched multi-motor systems. Sized from  $\frac{1}{2}$  to 200 hp, Select-A-Spede runs on A.C. power, but furnishes precise, stepless D.C. control of speed and tension.

For complete information — or expert application help — contact your local Louis Allis District Office. Ask for Bulletin No. 2000. Or write the Louis Allis Co., 438 E. Stewart Street, Milwaukee 1, Wisconsin.

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## western meetings

### Technical session at AMHS meet

REGULAR TECHNICAL SESSIONS will become a part of the monthly meetings of the Los Angeles chapter of the American Material Handling Society.

The sessions will last for no more than 45 minutes following dinner. Members and guests will be invited to submit problems and questions to the meetings, said Don Ferguson, Robert H. Braun Co., technical sessions committee chairman.

This technical service will be made permanent and available to members of the LA chapter at all times, with trips into a member's plant if necessary to help solve a particular problem.

Planned for future technical sessions are conveyors, bulk handling, warehousing, cranes, integrated handling systems and others. Panelists for the first technical workshop on fork trucks included L. J. Lutz, Automatic trucks; Marshall Couden, Irving G. King Co.; Warren Burman, Hyster Co.; Art Linnemeyer, Robert H. Braun Co.; Ken Scott, M. E. Canfield Co.

### Metals Engineering Institute courses

A SERIES OF 18-WEEK Metals Engineering Institute courses — starting September 28 — is announced by the Los Angeles chapter of the American Society of Metals.

Applications may be filed up to the first meeting of each course, said Fred K. Landecker, chairman, MEI committee. Landecker may be reached at Metal Improvement Co., 1721 East 47th St., Los Angeles 58, Calif.

Four MEI courses will be offered with the following

**INDUSTRIAL ENGINEERING GRANT** — Members of the Los Angeles chapter of the American Material Handling Society (AMHS) are pictured below at a ceremony at which they presented the industrial Engineering Department, University of Southern California, with a \$1,500 grant to be used toward the purchase of an analog computer. The computer will be used for research and development work. Pictured (left to right) A. E. Flinck, Ford Motor Co.; Andy Briggs, May Co.; Professor Homer H. Grant, head of S.C. Industrial Engineering Dept.; W. B. Semco (president, LA chapter AMHS), W. B. Semco & Associates.



instructors, starting on dates listed in the indicated meeting places:

**Elements of Metallurgy:** Instructor—Willis T. Chandler, Ph.D., Sr. Research Engr., Rocketdyne Div. of North American Aviation. Starts Monday, Sept. 28, 7-9:15 P.M., at Southern California Gas Company, 810 S. Flower, Los Angeles.

**Heat Treatment of Steel:** Instructor—Stanley Pohl, Research Metallurgist, Western Gear. Starts Tuesday, Sept. 29, 7-9:15 P.M., at Joseph T. Ryerson & Sons, Inc., 4310 Bandini Blvd., Los Angeles.

**High Temperature Metals** (Co-sponsored by San Fernando Chapter): Instructor—Morris Tiktinsky, Materials and Processes Development Engr., Lockheed Aircraft Corporation. Starts Monday, Sept. 28, 7-9:15 P.M., at Southern California Gas Co., 1641 Ivar St., Hollywood.

**Stainless Steels:** Instructor—David R. Apodaca, Sr. Research Engr., Autonetics Div. of North American Aviation. Starts Monday, Sept. 28, 7-9:15 P.M., at Dept. of Water & Power, 110 S. Boyleston St., Rm. 301, Los Angeles.

Enrollment fee, \$55, includes 15 MEI lesson-tests, written tests and a hand-inscribed MEI certificate on successful completion of the course. The Metals Engineering Institute is fully accredited by the National Home Study Council. The courses will be open to interested persons but classes will be limited to 35 each.

A similar series of courses is being sponsored by the Golden Gate chapter of the ASM. Further information may be obtained from Ben Berlin, Industrial Steel Treating Co., 1549 - 32nd St., Oakland 8, Calif.

### New officers of Seattle SPHE

NEW OFFICERS of the Seattle chapter of the Society of Packaging and Handling Engineers include: President, Bernard L. Alleman, Industrial Crating & Packing, Inc.; Vice President, Edward Pugel, Longview Fibre Co.; Treasurer, Robert Taylor, Washington Excelsior; Secretary, Dave Paxton, West Coast Paper Co.

Board of Directors members elected include: Palmer Arzo, Industrial Crating & Packing, Inc.; Ray Kemp, Kenworth Motor Truck Corp.; Bill Moratti, United Control Corp.

### Seminars on Work Simplification

ONE DAY SEMINARS on Work Simplification will be held Sept. 23 in Los Angeles (Sheraton-West Hotel) and Sept. 24 in San Francisco (Sheraton-Palace Hotel).

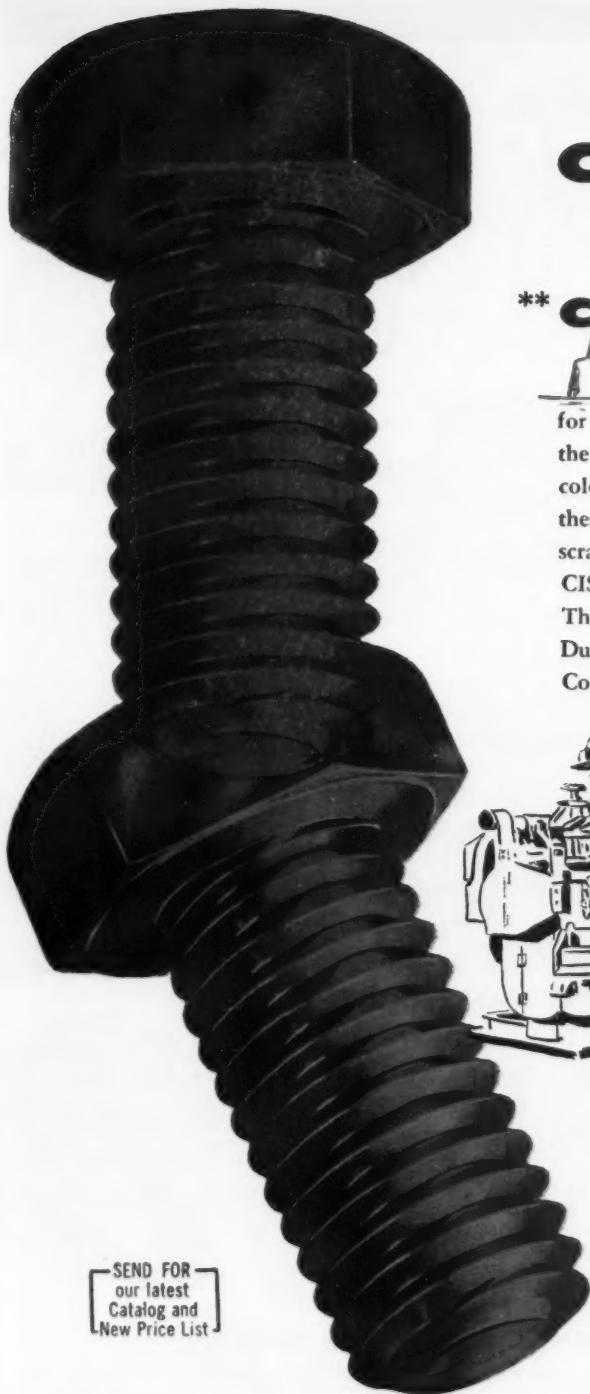
The seminars will be conducted by the Industrial Education Institute. Paul S. Kenmoen, Director of Work Simplification, Carnation Co., and Robert L. Nugent, Director of Work Simplification, Thriftmart, Inc., will be in charge of the program. They are both graduates of the Lake Placid Conferences on Work Simplification.

Further information may be obtained from the Industrial Education Institute, 25 Huntington Ave., Boston 16, Mass.

### SAE National Aeronautic meeting

WHAT WILL TOMORROW'S missiles, space vehicles, and aircraft require in engineering design and manufacture?

. . . continued on p. 16



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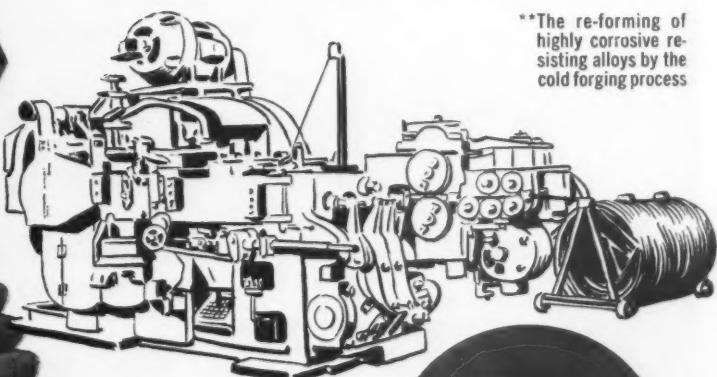
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cold forging process



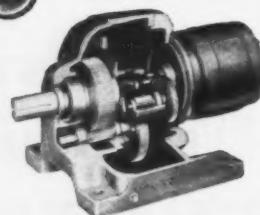
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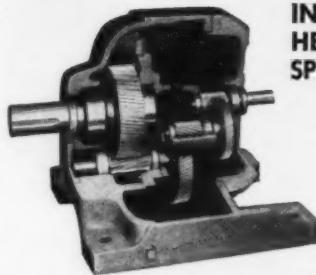
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### GEARMOTORS

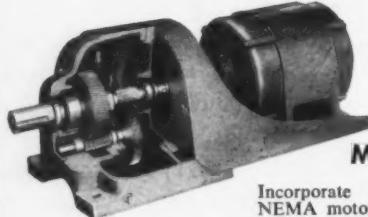


—the ultimate in compactness—maintain positive alignment with flange-mounted NEMA motors. Double, triple and quadruple reductions, sizes up to 100 hp, speeds from 280 down to 1.8 rpm. Send for Book 2747.

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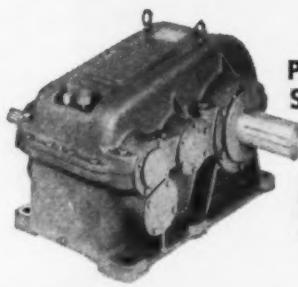


let you mount the motor where you want it. Save space with input and output shafts located on same planes. Ratios 6.2:1 to 2217:1, capacities to 206 hp. Send for Book 2751.



### MOTOGEARS

Incorporate bracket-mounted NEMA motors of any manufacture and enclosure, permit quick, simple motor replacement. Double, triple and quadruple reductions. Sizes up to 100 hp, ratios from 6:21 to 985:1. Send for Book 2747.



### PARALLEL SHAFT SPEED REDUCERS

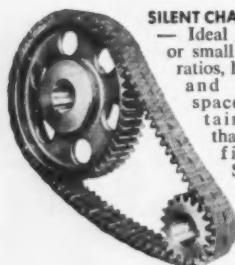
For high-capacity, heavy shock loads. Ratios to more than 300:1 and hp capacities to over 2000.

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— For drives and conveyors, available in single or multiple widths, in  $\frac{1}{4}$ " to 3" pitch and 1" to 3" double pitch. Stock sizes up to 75 hp. Send for Book 2657.



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**SELF-ALIGNING BALL AND SPHERICAL ROLLER BEARINGS** adjust to shaft deflection or misalignment, compensate for normal inaccuracies of mounting. In popular shaft sizes up to 11"—pillow blocks, flanged, flanged-cartridge, cartridge and takeup blocks. Also available in cast and pressed steel housings. Send for Ball Bearing Book 2550 and Spherical Roller Bearing Book 2760.



**BABBOTTED AND BRONZE BEARINGS** — Pillow blocks and flanged blocks are available in 15 different types, solid or split housings, shaft sizes from  $\frac{1}{2}$ " to 8". Send for Book 2707.



### SHAFT-MOUNTED SPEED REDUCERS

Designed to simplify and satisfy the majority of speed reduction jobs. Made in double and triple reductions up to 40 hp. Send for Book 2618.

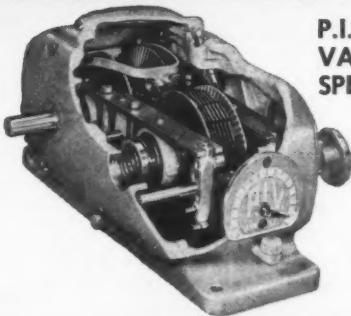


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Stepless, instant variation through a complete range of speeds. 21 types, 9 sizes from  $\frac{1}{2}$  to 75 hp and ratios up to 6:1. Catalogs 2274 and 1050.

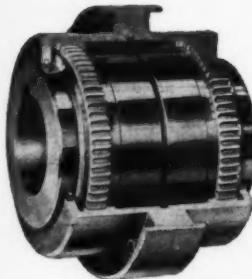


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Offer smooth powerful acceleration and operation . . . start heavy loads without excessive power demands . . . protect operating equipment. Available in Fluid, Fluid Gear, Electrofluid Gearmotor and Electrofluid Motogear combinations in single, double, triple and quadruple reductions from 6:2:1 to 985:1 and capacities up to 50 hp. Send for Book 2747.

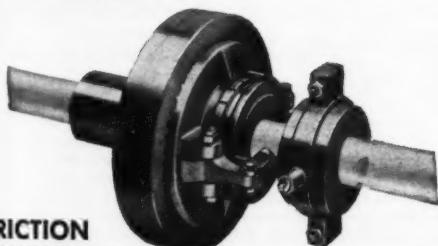
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For complete information and literature, call your nearest Link-Belt office or authorized stock-carrying distributor.

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15,218-P

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15

## MEETINGS

(continued)

Panels will be held to explore these questions at the Society of Automotive Engineers (SAE) National Aeronautic Meeting to be held October 5th through 9th at Los Angeles.

Panel sessions on October 5-6 will deal largely with efficiency in design, construction, and manufacturing operations. Starting October 7th and continuing through the 9th, sessions will accommodate the presentation of papers on equipment, structures, propellants, air terminal operation, experience with jet and supersonic transports, and related subjects.

### Engineering Management Conference

THE SEVENTH ANNUAL Engineering Management Conference sponsored jointly by the Metallurgical Society of AIME, ASME, AIEE, ASCE, AIChE and the Los Angeles section of IRE will be held September 17-18 at the Statler Hilton Hotel in Los Angeles.

Papers and presentations will be made on a variety of subjects dealing with the Conference theme, "Managing Engineering Resources." Full registration fee, including meals, is \$30 for members of sponsoring organization and \$35 for non-members.

Contact local chapters of sponsoring groups for details.

### SPHE technical papers meeting

THE LOS ANGELES CHAPTER of the Society of Packaging and Handling Engineers will announce winners of the Harry Lamar technical paper contest at its meeting on October 5.

Speakers on tap for the evening include Dr. Thomas Oehrlein, human factors division, North American Aviation Missile Div., who will speak on the phenomena of "weightlessness."

The other speaker will be Fred Paine, chief of preliminary analysis, North American Aviation, who will talk on "Widest Horizons in Packaging."

Dinner reservations may be phoned to John Moore, Zellerbach Corp., AN 8-5252.

### AMHS Handling, Packaging course

A SHORT COURSE IN packaging, plant layout and handling from Nov. 15 to 20 at the University of California Conference Center, Lake Arrowhead, Calif., has

**NEW OFFICERS, S.F.-OAKLAND AIIE**—Pictured below are new officers of the San Francisco-Oakland chapter of the American Institute of Industrial Engineers (AIIE). Left to right: Charles Wildenstein, Merchant Calculators, general membership committee; Bob Knighton, Columbia-Geneva Div., U.S. Steel Corp., United Engineering Fund; Barry Casad, Lockheed Missile Div., historian; Marshall Peal, Benicia Arsenal, program committee; Jim Cavanagh, Columbia-Geneva Div., U.S. Steel Co., secretary; Frank Peters, Bemis Bro. Bag Co., president; Kruuse Caroe, Hexcel Products, co-editor of newsletter; Art Hecht, Continental

been endorsed by the Los Angeles chapter of the American Material Handling society.

AMHS members for the Los Angeles chapter will be among the speakers and will serve on coordinating committees during planning sessions for the conference.

At the last meeting of the LA chapter of AMHS, a program was presented on "Casters and Wheels." Panelists included Otto Holler, Western Manager, Faultless Caster Corp.; George Cherry, Colson Equipment Corp.; Tom Watson, Darnell Corp. Ltd.; and Paul Semler, Bassick Co.

### Sealing symposium on missiles

A SYMPOSIUM on sealants and sealing of aircraft, missiles and electrical components will be held Oct. 28-30 in the Institute of Aeronautical Sciences building, Los Angeles. The symposium will be held during the Aircraft Electrical Society's annual display in the Pan Pacific Auditorium.

### New officers LA ASM

NEW OFFICERS of the Los Angeles chapter of the American Society of Metals include: H. A. Curwen, Earle M. Jorgensen Co., president; William V. Ward, Lockheed Aircraft Co., vice chairman; Kenneth L. Clark, International Nickel Co., secretary; Edward W. Galda, Phelps Dodge Copper Products Corp., treasurer; Charles H. Dickson, Alloy Fabricators, Inc., assistant secretary; Stuart K. Oliver, Swanney & Williams, past chairman.

Committee members include: Robert H. Gassner, Douglas Aircraft Co., education; Edward C. Buckingham, Pacific Scientific Co., year book; John A. Ferrante, Sr., Perry Kilsby, Inc., publicity; O. Vic Campbell, Industrial Steel Treating Co., entertainment; William R. Patterson, National Supply Co., membership and employment; Edward Egloff, Egloff & Graper, attendance; Fred K. Landecker, Metal Improvement Co., Metals Engineering Institute; John Goodwin, Globe Oil Tools Co., plant visits.

### Pasadena AIPE chapter

ENGINEERS INTERESTED in forming a chapter of the American Institute of Plant Engineers (AIPE) in the greater Pasadena, Calif., area are requested to contact Jim Weeks, National Vice President of AIPE, who can be reached at Proto Tool Co., 2209 Santa Fe Ave., Los Angeles. Phone LU 9-3311.

An organizational meeting is planned in the near future.

. . . continued on p. 20

Can Co., director; Lou Mrkvicka, Continental Can Co., publications committee; Tom Lashbrook, Owens-Illinois Glass Co., opportunities service section; Jim Larsen, Colgate-Palmolive Co., fellowship committee; Frank Giovannini, Johns-Manville Corp., professional registration committee; Charles Differding, Mare Island Naval Shipyard, program committee; Harry Riley, Columbia-Geneva Div., U.S. Steel Corp., program facilities and announcements; John Dougall, Columbia-Geneva Div., U.S. Steel Corp., Junior Achievement committee. Photo was taken at installation ceremonies.





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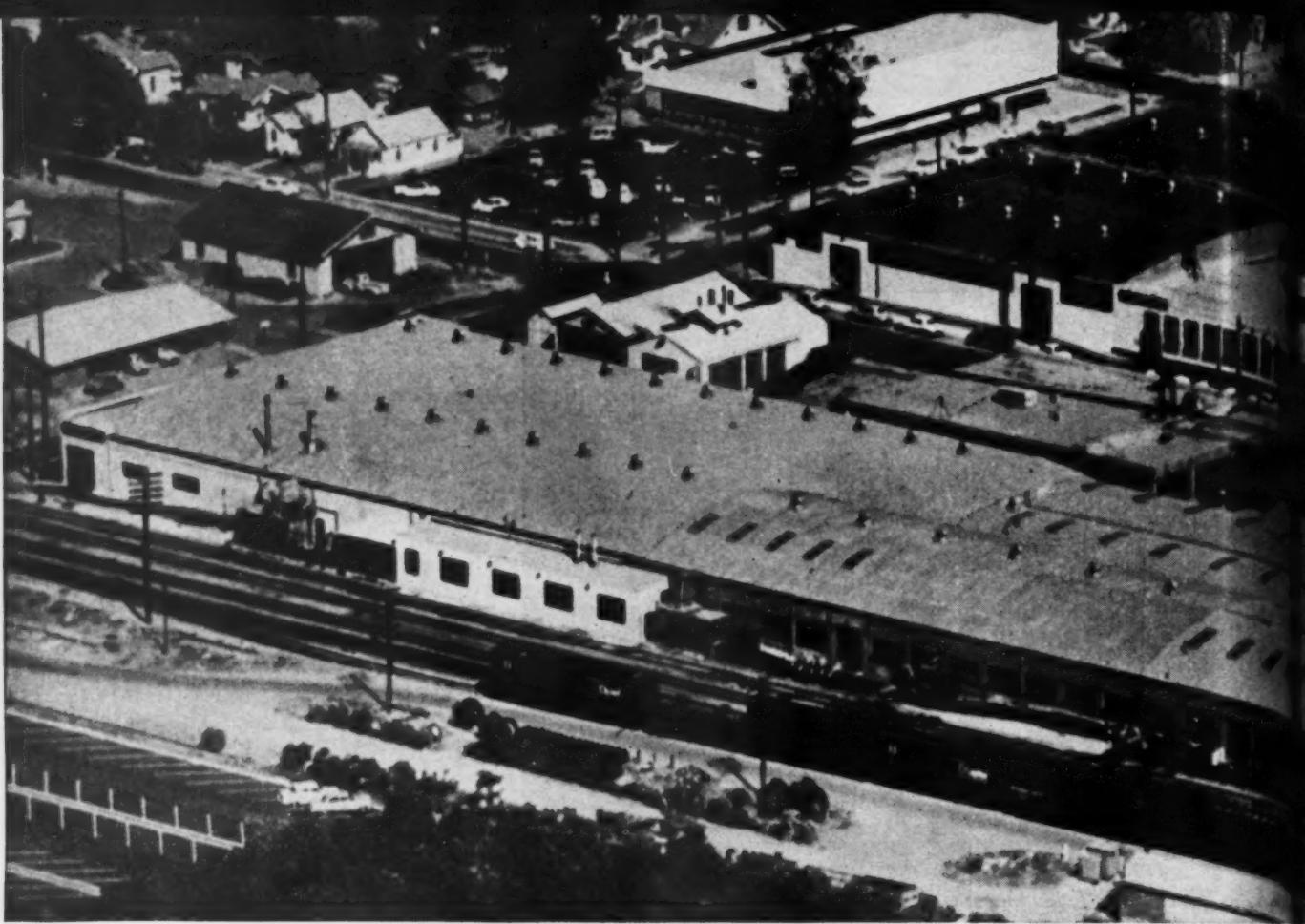
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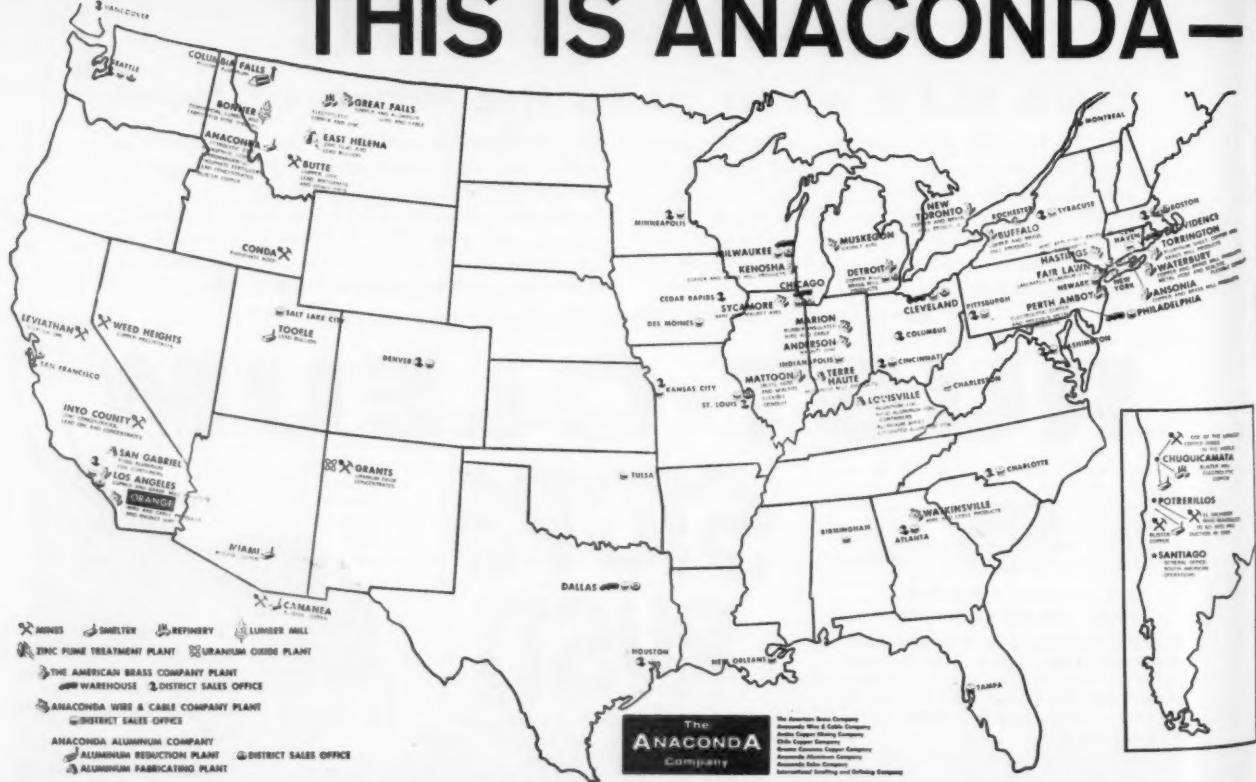
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## MEETINGS

(continued)

### Pallet users' conference

A PALLET USERS' CONFERENCE will be held on Friday, September 25, at Stanford University in Palo Alto. The conference will feature talks by leading authorities on properly purchasing and specifying wooden pallets . . . inspection procedures . . . and correct use and maintenance of pallets.

Registration fee is \$10, including lunch. Further information may be obtained from the National Wooden Pallet Manufacturers Association, 609 Barr Building, Washington 6, D. C.

### Plans for M-H Show

NEW DEVICES, METHODS AND SYSTEMS to reduce costs and expedite handling and packaging operations will be introduced at the Third Western Regional Material Handling Show and Packaging Cavalcade, May 11-13, 1960, in the Great Western Exhibit Center, Los Angeles.

A. E. Flinck, past-president, Los Angeles chapter, American Material Handling Society—the sponsoring organization—says that displays will be keyed to existing needs of the ever-expanding Western market.

Larger, heavier equipment will be placed outside the exhibit structures where 75,000 adjacent sq. ft. are available for the purpose. Inside the buildings will be spaces for 275 additional exhibits.

### Bosses Night for AIPE chapter

IT WAS BOSSES' NIGHT at the Sept. 2 meeting of the Orange County chapter of the American Institute of Plant Engineers (AIPE). The bosses joined in on round table discussions about plant engineering problems.

### Papers for Computer Conference

A CALL FOR PAPERS for the 1960 Western Joint Computer Conference next May 3-5 in San Francisco has been issued by Howard M. Zeidler of Stanford Research Institute.

Zeidler said special emphasis will be placed on areas where new planning and new research and development programs are directed toward the growth of computer technology during the next decade.

Submissions to the program are to be prepared on the basis of a 30-minute delivery, with extra time being available for discussion. Evaluation will be on the original draft, three copies of which must be directed to Howard M. Zeidler at Stanford Research Institute, Menlo Park, Calif., before Nov. 9.



PAST PRESIDENT'S PIN—W. B. Semco, W. B. Semco and Associates, president of the Los Angeles chapter AMHS, presents a past president's pin to A. E. Flinck (left), last year's president. Four other past presidents were honored.

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### For General Use buy

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Five Sizes for  $\frac{1}{2}$ " to 6"



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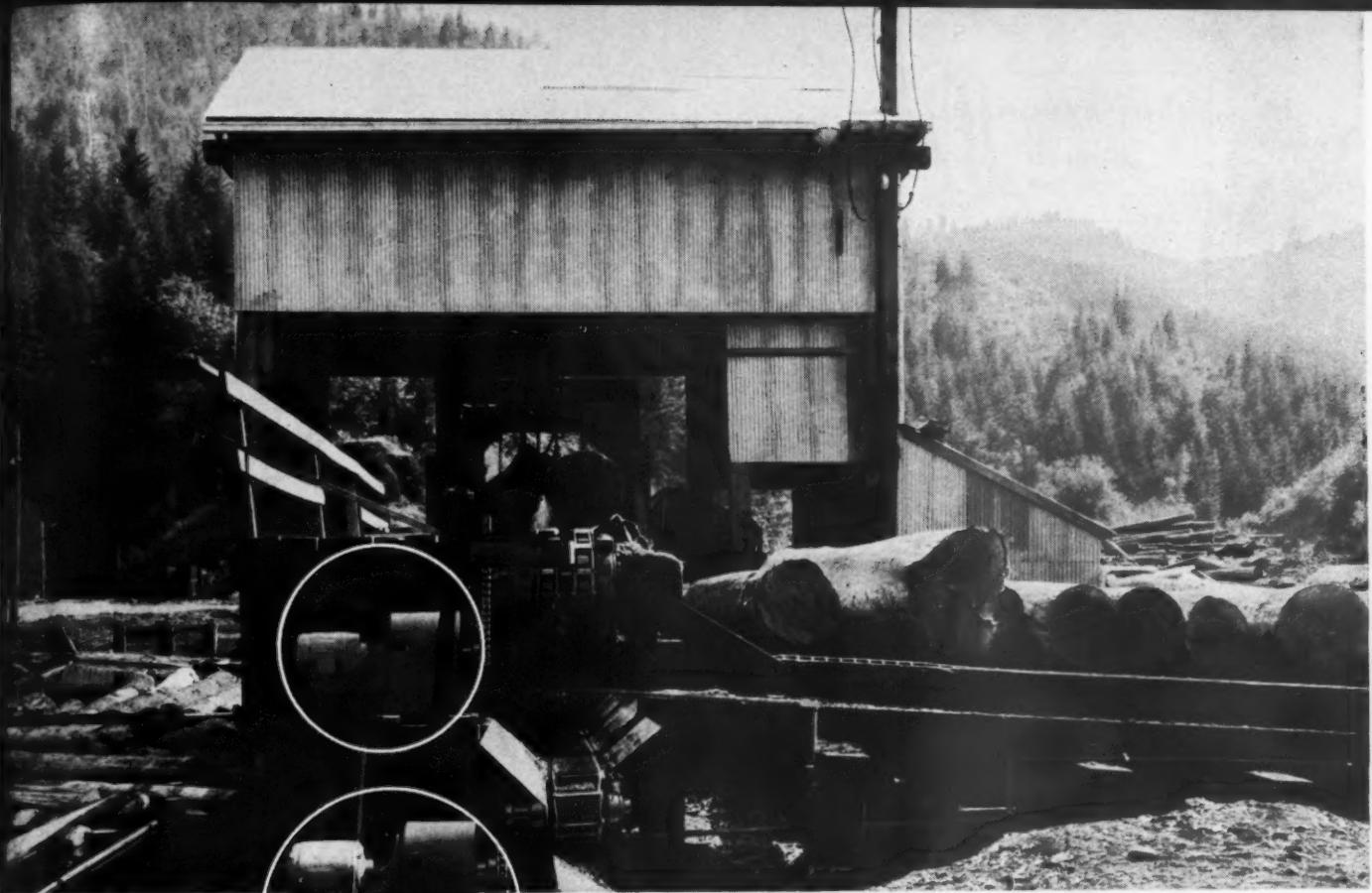
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And if your installations are subject to shock loads, or accidental external impacts, you're way ahead when you install Falk All-Steel Motoreducers. These rugged units do not destroy themselves by tearing off their feet under jamming overloads, nor are their housings subject to cracks which both dissipate the vital lubricant supply and allow revolving elements to get out of alignment.

All-steel construction is one of the built-in extras that you get in Falk Motoreducers. Others include: (1) 12 to 15% reserve load-carrying capacity in the gears (by AGMA standards), thanks to exclusive Falk extra-depth, high pressure angle helical gears; (2) maximum mechanical efficiency (98½% per gear mesh, under full load); (3) your choice of standard units (horizontal, vertical or right angle) to fit your precise requirements.

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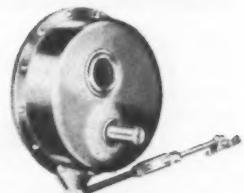
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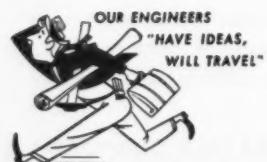
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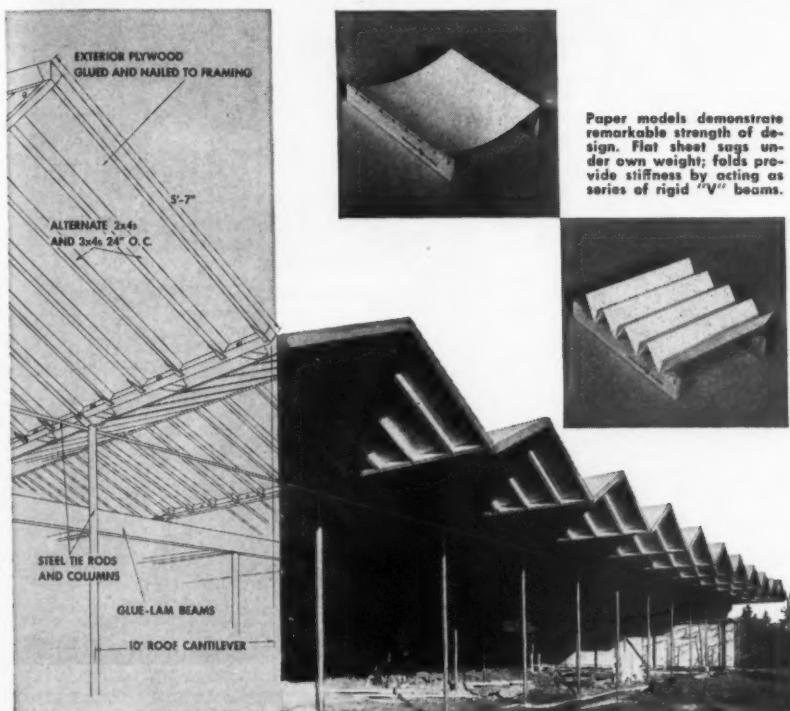
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A REPORT TO MANAGEMENT ON HOW

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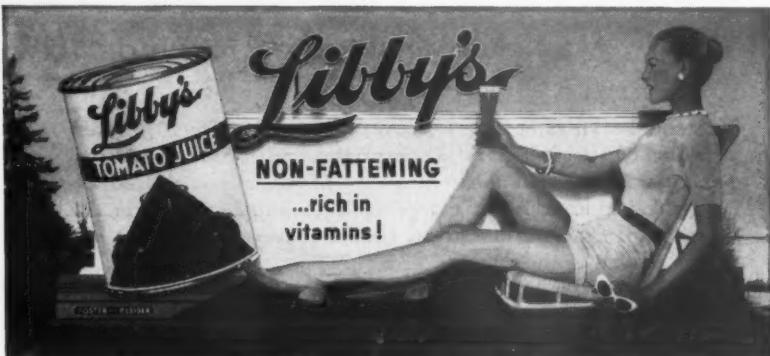
**Strength from shape**—not mass—is the key to this precisely engineered fir plywood folded plate roof. The plywood plates are stiffened with light lumber framing and act in pairs to form a series of giant "V" beams.

Stronger, yet less expensive (by 20 per cent or more) than conventional joist or truss construction, fir plywood folded plate roofs are ideal for warehouses, stores or other buildings that require large, clear floor areas. Depending on design, the system permits clear spans of 50 feet or more.

In the 14,000 sq. ft. shopping center shown here under construction, plywood roof components were fabricated on the ground using common labor, and installed by a 6-man crew in less than nine hours. In-place cost came to less than 80¢ per square foot.



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**Giant overlaid plywood cut-outs** add real impact to outdoor advertising. This giant bulletin produced by Foster & Kleiser, San Francisco, for Libby's is being rotated in key West Coast markets. The plywood cut-outs are light, strong, and easy to fabricate. The medium density resin-fiber overlay is fused to the panel during manufacture to form a smooth, durable surface for quality paint finishes. The overlay is completely waterproof and has a slight "tooth" for better paint adhesion.

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—an industry-wide organization devoted to research, promotion and quality control

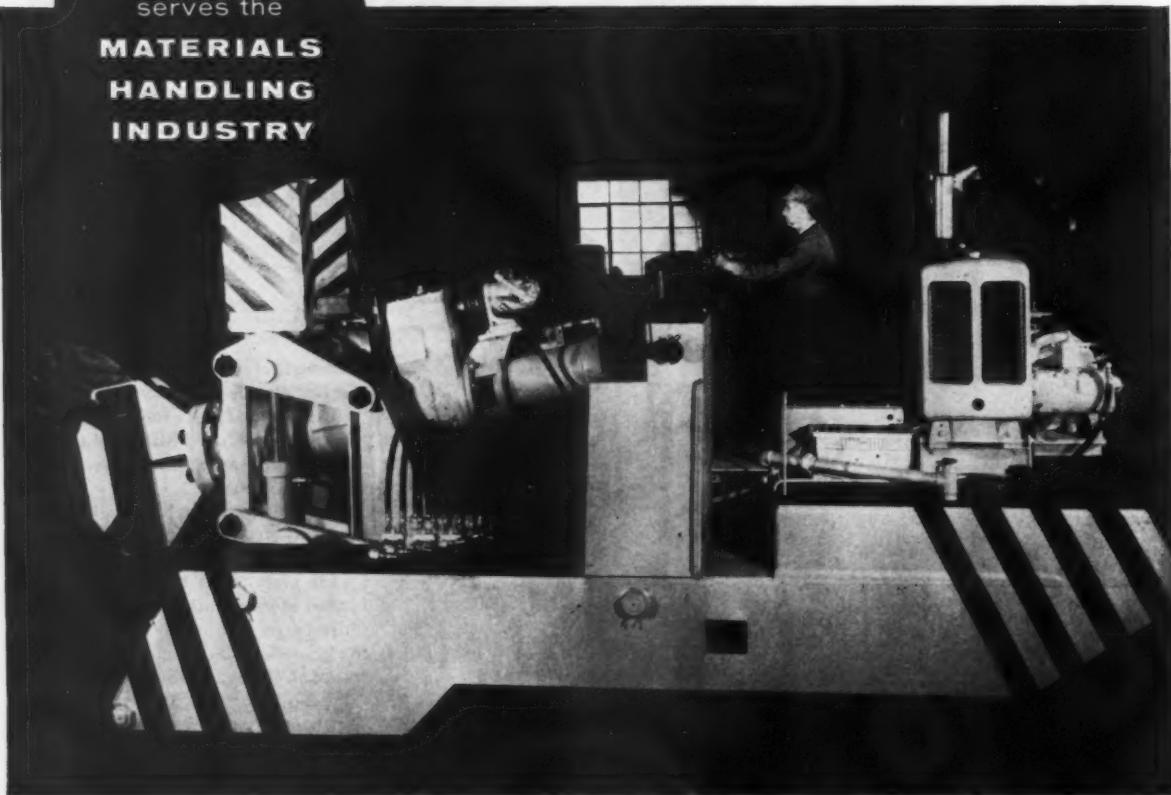


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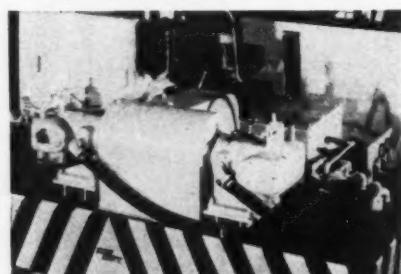
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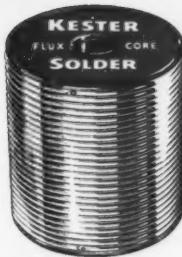


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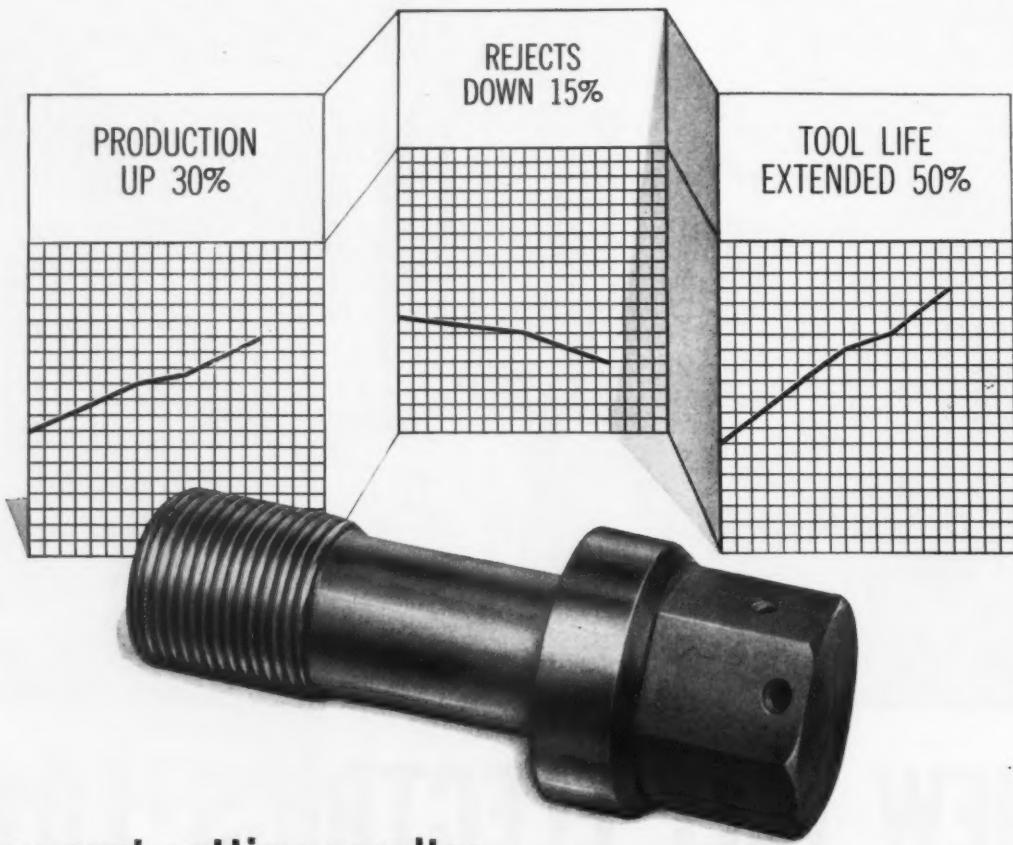
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## MAJOR INNOVATIONS in power and control

Electrical system for new electrolytic tin plate line features automatic closed-loop feed-back controls . . . magnetic amplifier type regulators . . . memory devices . . .

**M**AJOR INNOVATIONS IN THE ELECTRICAL FIELD have been achieved by a new power and control system for an electrolytic tin plate line.

This line was installed recently at the Pittsburg (Calif.) Works of the Columbia-Geneva Division of U. S. Steel Corp. The line—one-third longer than a football field—can produce in one minute enough tin plate to make 6,000 average size cans.

The new installation is equipped with automatic closed-loop feed-back control systems to regulate and synchronize most of the line functions. Included are modulated loop controls—both magnetic and photo-electric—and regulators governing speed, edge position, tension, temperature, and plating current. All of the regulators are synchronized to the speed of the moving strip steel.

The line employs pin-hole detectors, radiation gages for measuring steel and coating thickness, flow line indicators, reflectivity devices for surface inspection, and sheet classifying equipment. An important factor in the quality control system is a series of memory devices. These automatically cause cut pieces of tin plate to be placed in separate piles.

Control devices can operate with the ribbons of steel racing through the line at speeds up to 1,250 fpm. These devices provide a maximum degree of thickness control of both steel and the tin coating. They assure uniformity of finish, accurate classification, and exact-

ness in counting and piling.

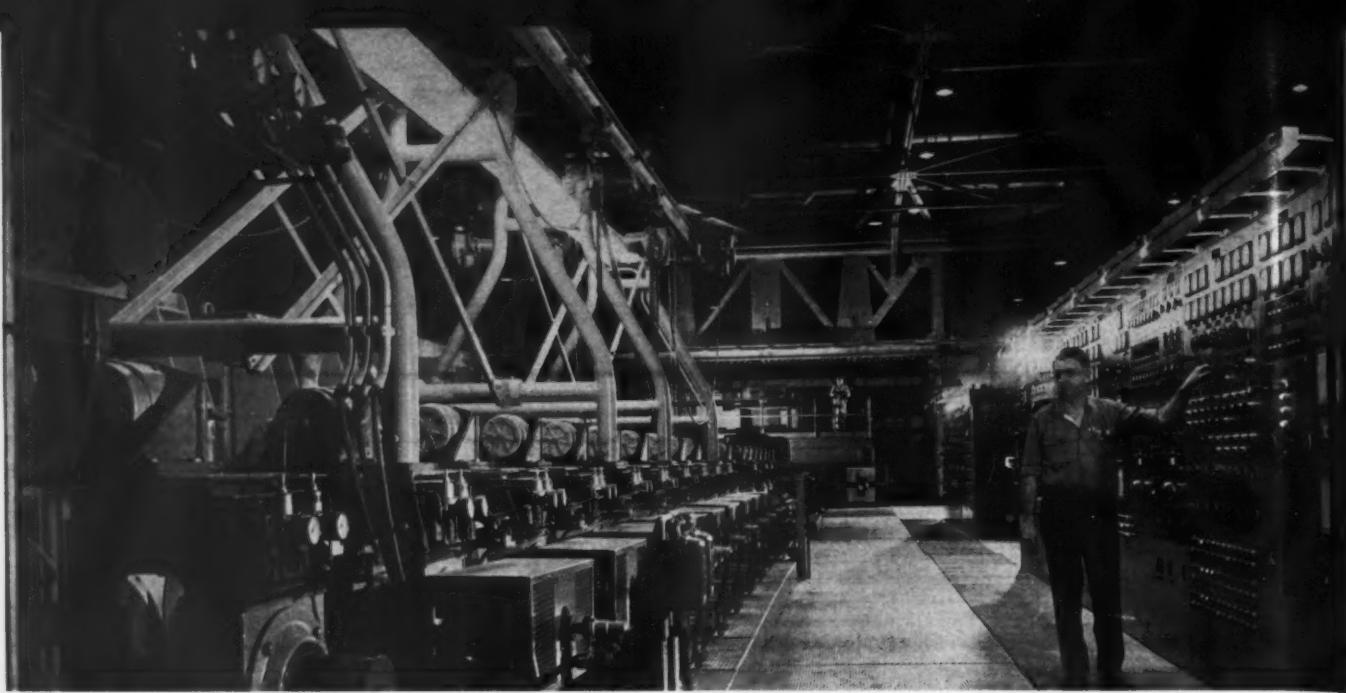
The line consists of three sections—Entry (where the new coils are welded together so steel being processed will be a continuous operation), Electrolytic Plating (where the steel is electrolytically plated with tin to the desired specifications), and Delivery (where the tin plate is either coiled or sheared to various lengths depending upon requirements).

These three sections are tied into one continuous system by numerous magnetic amplifier type regulators mounted on panels. The regulators take the place of conventional type relays. As they are static devices and have no moving parts, they eliminate maintenance problems.

The adjustable voltage direct current control equipment for the line is mounted on open, factory-assembled, sheet steel control panels. The sheet steel panels are mounted back to back to cut down the required space in the motor room. Direct current control panels are approximately 90 in. high, 72 in. deep, and over 110 ft. long.

Direct current motors (some 129 of them) drive the line. These motors have ratings between 1.5 and 100 hp. They are regulated by the magnetic amplifier type regulators and receive their power from five (5) motor generator sets.

Also, besides the direct current control for the line equipment, there are more than 90 alternating current



*NEW STANDARDS of operation and control have been achieved by this intricate electrical system for the third electrolytic tinning line at the Pittsburg, Calif., Works of the Columbia-Geneva Division of U.S. Steel Corp. Operator is turning switch on main control panel.*

auxiliary motors with their associated control. In addition there are controls for the numerous solenoid valves associated with the various hydraulic and pneumatic systems.

The line is supplied with power at 6900-v. The high voltage switchgear feeds two 3,000-kva. air-cooled dry type transformers which, in turn, supply the 480-v. power to the tinplate line.

Resistance-type heating equipment re-flows the tin to give it its bright surface after the electrolytic plating process. The current for this conduction heating is supplied by two 1500-kva. Inerteen-filled, single-phase transformers, each of which is controlled by a 1500-kva. returnable reactor.

The power and control equipment was engineered and installed by the Westinghouse Electric Corp.

*UP TO NINE STEEL SHEETS A SECOND can be sheared and classified on this automatic tin plate line. The line—one-third longer than a football field—can produce enough tin in one minute to make 6,000 average size cans. Each sheet undergoes electronic and visual inspection.*



# COMPRESSED AIR for efficient production

Unusual heavy-duty compressors allow flexible operation . . .

**C**OMPRESSED AIR is used extensively at the Buick-Oldsmobile-Pontiac Assembly Division, General Motors Corp., South Gate, Calif., because it has been found to be most economical, easiest to handle, versatile and common to a wide variety of types of equipment.

The heart of this power setup is compact heavy-duty air compressors manufactured by the Joy Manufacturing Co. They provide about 6400 cfm, or 1200 hp. of air power for pneumatically operated body assembling devices, paint spray, and other air powered units.

One machine is a "twin" and consists of two integral compressors connected to a large motor to

provide, at the approximate cost of one single large compressor, the flexibility and stand-by assurance of two compressors each with its own motor.

This flexibility is accomplished by simply disconnecting either compressor from the motor by dropping out a spacer plate (sometimes magnetic or air couplings are employed for this purpose) and letting the motor carry the second compressor at maximum efficiency.

Pipe distribution of the compressed air is through 10-in. main feeders down through outlets varying from  $\frac{1}{2}$  or  $\frac{1}{4}$  to  $\frac{5}{16}$ -in. Air is used for operating spot welding equipment (resistance welding) to activate the piston on the weld gun.

## ELECTRIC BRAKE, CLUTCH replace mechanical parts

Down time for maintenance virtually eliminated . . .

**D**OWN TIME FOR PARTS REPLACEMENT has been virtually eliminated at the Container Corp. of America in Los Angeles by substituting an electric brake and clutch in place of mechanically operated units.

Previously, clutches had to be rebuilt every two weeks. The present electric clutch has been in use for  $2\frac{1}{2}$  years and has not had to be replaced yet.

What is different about the electric brake and clutch used by the Container Corp. of America?

The clutch, manufactured by the Warner Electric Brake and Clutch Co., is a dry friction unit operated by magnetic engagement of a magnet and armature. It transmits power from a gear hub to a through shaft, and as a clutch coupling it transmits power directly from a driver to a driven shaft.

The two basic elements are the electromagnet and the armature disc.

The magnet assembly can be mounted integrally with the driving or driven shaft. The clutch armature is mounted directly to the drive pulley, which rotates

on a bearing independently of the through shaft. The clutch-coupling armature assembly is mounted integrally with the driving shaft.

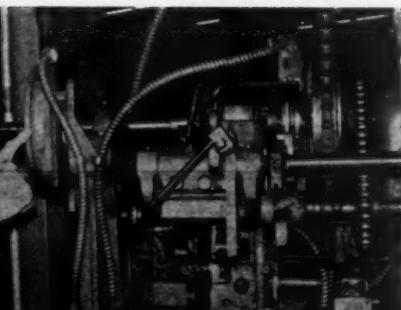
The electric clutches operate on approximately 90 volts of direct current at .35 amps, or 6 volts at 3.5 amps. When the magnet coil is energized the iron shell becomes a powerful magnet and attracts the armature, completing the magnetic circuit. The magnet receives current through collector rings and brushes.

Torque may be controlled by a rheostat which varies the amount of resistance in series with the magnet coil.

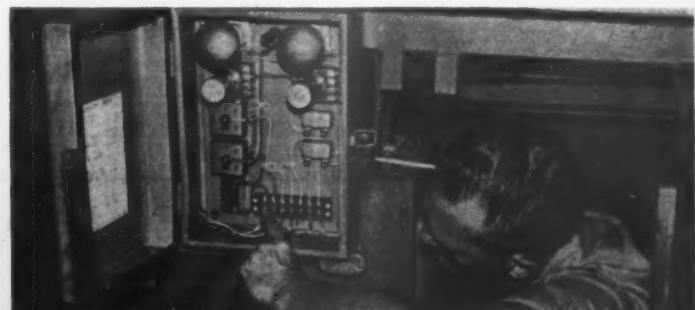
The primary 825 electric clutch and brake are equipped with an over-excitation control which automatically closes a brake circuit switch with approximately 250 volts. Lamp bulbs limit the magnet voltage so that steady operation of the brake is at rated voltage.

If the control is used to power only one magnet, and that is connected to the lamp bulb circuit, the magnet is over-excited with approximately 300 volts when the switch is closed.

*DRY FRICTION CLUTCH is operated by magnetic engagement.*



*OVER-EXCITATION CONTROL for both brake and clutch.*



## NOVEL HYDRAULIC POWER

### pump-accumulator system

Intermittent power requirements, long dwell periods demand special features on huge forging presses . . .

NORMAL PRODUCTION CYCLES of hydraulically-operated forging presses consist of a power stroke followed by a return stroke and a period of idleness for recharging. The power stroke may extend over a considerable period of time.

Such intermittent power requirements, coupled with the long "dwell" time, necessitate special provisions for transmission and storage of power for release at a later period.

For large capacity presses—such as the 8000-ton forge press at Aluminum Company of America's

Vernon, Calif., Works—the power transmission system usually incorporates an accumulator, either of the ballasted piston type or, more commonly, the air hydraulic type. It is this latter type which is used by Alcoa.

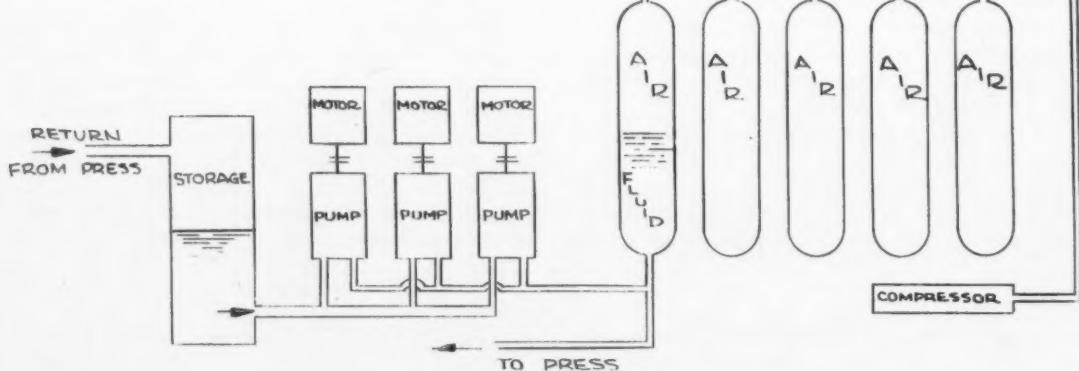
The basic elements of such a system consist of a fluid storage tank, the power source (usually synchronous motors), the hydraulic pumps, the accumulator, and an air compressor. Hydraulically, the accumulator performs the same function as a flywheel does in a mechanical system.

Normally, a number of pumps are provided, depending on the volume requirements of the press. These pumps draw the hydraulic fluid from the storage tank and discharge under pressure into a manifold which feeds either the press directly, or recharges the accumulator.

As the press uses hydraulic fluid, the accumulator (and/or pumps) discharge power. At the completion of the press stroke, decompression takes place and spent fluid is returned to the storage tank. Various types of control can be incorporated to regulate pump delivery to match the varying fluid level of the accumulator.

These systems are usually designed for a specific operating pressure, but pressure fluctuations are to be expected since the ballast is a compressible gas, and the volume of gas in the accumulator varies with the fluid level. The effect of such fluctuations can be minimized by increasing the volume of gas in the accumulator.

In the system which Alcoa uses to transmit power to the giant forge press, the pumps provide a pressure of 4500 pounds per square inch in the accumulator bottles. Three septuplex pumps are capable of pumping a total of more than 700 gallons per minute and are driven by directly coupled electric motors rated at 700 horsepower.



SCHEMATIC DIAGRAM OF PUMP-ACCUMULATOR SYSTEM

## STEADY POWER for batch mixing

Motorized speed reducers eliminate slippage, maintenance

**M**ISS SAYLOR'S UNUSUAL CHOCOLATES are noted for their smooth, creamy fillings. But they could be a sticky mess if the filling wasn't mixed properly.

That's why the Alameda, Calif., firm uses positive drives on its beaters—drives that will maintain a steady beating pace from start to finish. This isn't easy. Unbeaten creme filling is a tough, sticky mixture at first; but as it is beaten the consistency gradually changes. As the mixture thins out, the drive must keep it moving at the same speed, even though constantly less torque is required. If there is any stoppage, some 110 lb. of filling is in danger of being spoiled.

Formerly, Miss Saylor's operated with an old system of V-belts and pulleys furnishing power on the beaters. But with this setup it had to use smaller beaters . . . experienced slippage, especially at the start . . . and had a maintenance problem in cleaning up around the drives.

When the firm decided to get larger beaters, it

sought more exact control for its drives. After checking around it decided to install Boston Gear Ratiomotors,  $7\frac{1}{2}$ -hp. with 1750 rpm.

Basically, these units consist of a complete power package containing a gear reduction unit and a detachable standard end-mounted motor. The speed reduction units deliver certified ratings over a wide range of speeds. Motors can be detached easily and there is no problem of line-up with couplings. In less than five minutes a new unit can be installed.

Gene Hewitt, plant superintendent, explains some of the advantages of this new installation:

"We were able to install these drives in a small space, right beside the beaters. We are absolutely assured of uniform mixing. And maintenance has been reduced as we can hose around the speed units without fear of damaging them. With the old system, we had to clean around the safety guards which collected dust easily."

All this adds up to smooth fillings for Miss Saylor's unusual chocolates.

## NEW DRIVES on large overhead cranes

Dry fluid drive delivers soft starts and guards against shock

**T**HE TRAVEL DRIVE on a big overhead crane at Mechanical Services, Inc., 4171 Holt Blvd., Pomona, Calif., had been the source of frequent trouble and lost production.

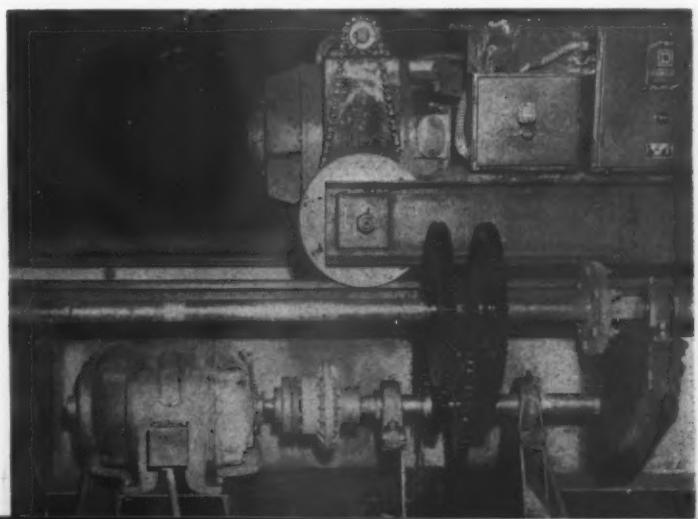
The fluid coupling tended to build up torque to the extent that shafts and keys were breaking when the direction of the motor was reversed.

A new drive was substituted, including a Flexidyne dry fluid coupling, Taper-Lock Sprockets, pillow blocks and chain. The dry fluid unit, designed to deliver "soft" starts and protect against shock loads involved in motor reversals, proved to be the perfect solution to the problem.

The new drive was installed some time ago and has performed perfectly, requiring no maintenance or repairs. Flexidyne couplings and V-belt drive units employ a new principle for transmitting torque from motors or engines to driven machines. The "fluid," heat-treated steel shot, is contained in the housing and is thrown to the perimeter of the housing when the motor is started. Centrifugal force packs it between the housing and rotor which transmits power to the load. After an initial brief period of slippage between housing and rotor, the two become locked together and achieve full load speed, operating without slip and with 100 per cent efficiency.

The power transmission equipment was secured from the Dodge Manufacturing Corp., Mishawaka, Ind., and supplied by Reliable Bearing & Supply Co., local distributor.

*DRY FLUID COUPLING, new sprockets, pillow blocks and chains solve power transmission problem on the travel drive of this crane.*



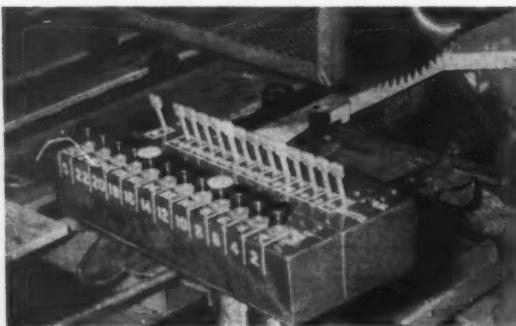
## MEMORY UNITS for the lumber industry

Controls, valves, cylinders team up to saw and sort lumber . . .

THE LUMBER INDUSTRY is making its contribution to the Electronic Age. This industry is developing such advanced devices as memory systems. Firms like Brooks-Scanlon, Georgia Pacific, Simpson Lumber Co. and others are using these electronic units to speed up many chores . . . including trimming and sorting of lumber.

Basically, memory systems consist of a panel of push buttons which, when depressed, cause the activation of valves and cylinders. The valves then motivate saws on trimmers and the various gates on sorters.

By using the memory devices, operators can make a selection of any up to 17 saws on a 34-ft. trimmer. The operator watches the boards as they pass, makes his selection (up to four boards back on the trimmer),



then pushes the button. When the board gets to the trimmer the right saw descends to do the job specified.

On a sorter, the operator can select as far back as 40 boards from the gate. When the board reaches the sorting area, the gate positions automatically to send the board to the proper location.

The valves and cylinders doing the motivating are extremely important in memory devices. The firm that manufactures many memory systems has studied the most suitable valves and cylinders. Here is what Harry C. Pearson, engineer at Portland Iron Works, has to report on the valves and cylinders his firm uses in memory devices:

"We have found that solenoid pilot valves and 4-way valves are best suited for memory devices. Solenoid pilot valves have a pressure range from 0 to 250 psi., and they can be used for two or three way applications.

"Miniatrized 4-way valves we use are only 4 in. high and weigh 30 ounces. The pilot plunger, spring and shuttle are all stainless steel and are the only moving parts. They have a 15-140 psi. range.

"Most of these valves are made by the Valvair Corporation, Akron, Ohio.

"The majority of our cylinders are Hanna Engineering Works low pressure type. These have piston O rings, ball type check valves, self-adjusting V-packing, bronze cushion sleeves, and many other qualities that we need.

## NEW BEARINGS seal out abrasives, corrosion

Efficient seals keep out foreign elements even at low speeds . . .

LIVE STEAM, CHEMICALS and detergents can ruin bearings—a fact to which Chem-Therm Manufacturing Co. was very sensitive in planning production of wheel washing equipment. And if the rollers on the wheel wash units stopped turning, a lot of customers were going to be unhappy.

The solution came in the form of Plya-Seal Inner Ring Ball Bearings, manufactured by the Fafnir Bearing Co. These bearings seal out abrasive and

corrosive contaminants from balls and races, even at very low speeds, while maintaining their supply of grease.

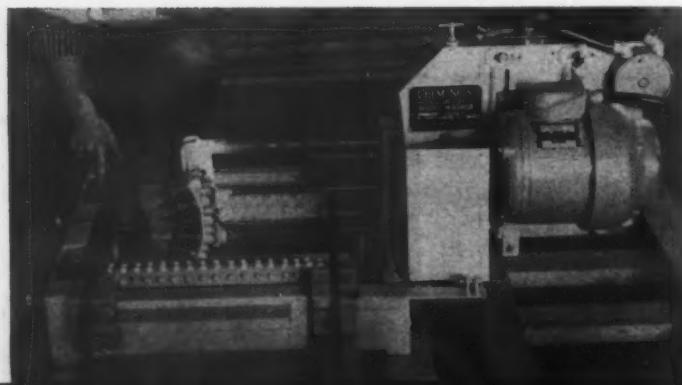
How do they work?

Resilient synthetic rubber seals are coated over a fabric base and contact the rubbing surface of the inner ring with a flared-out lip. This assures constant contact and a positive seal under all conditions of moisture and dirt.

Seal blow-out is prevented during relubrication periods by use of the contact seal which releases lubricant pressure instantly, preventing damage to the bearings and early failure.

An extra-large reservoir within the bearing permits a large supply of lubricant to assist the seals in preventing entrance of contaminants.

And there is a self-locking collar assembly which does away with the necessity of driving a bearing over a shaft which is upset by the normal set screw marks.



## ELECTRONIC DYNAMOMETER

first of its kind in the West...

Unusual operation achieved by high speed increaser linking steel roll of test stand and the dynamometer . . .

INCREASED TRAFFIC CONGESTION was making it difficult for the Richfield Oil Corp. Research and Development engineers to test the octane rating of cars. To obtain the necessary data it was essential that the cars be driven on the highway—unless some way could be found to duplicate road conditions to which cars are exposed when driven.

The result was the development of one of the first electronically controlled chassis dynamometers to be used in the West.

Once it was decided that exact road conditions could be duplicated in a laboratory, the engineers at Richfield's Anaheim research center, were faced with the alternative of adopting an available "off-the-shelf" chassis dynamometer, or building one to fit the firm's requirements.

They chose the latter, and set about the design and construction of their own test facilities. The design of the electronic section was turned over to a consulting firm, as well as the design for air conditioning equipment to be installed in the future.

Of particular interest is the fact that the dynamometer is electronically controlled. There is no mechanical inertia involved other than that belonging to the mechanical apparatus. A road load can be simulated by use of an electronic computer, which is also able to induce a simulated hill for up and down grade testing purposes. Head and tail winds can also be simulated by using the computer.

Here's how the testing procedure works:

The car to be tested is driven inside the laboratory and parked so that its rear wheels rest on two steel drums (45.8 in. diameter) supported on a 7-in. alloy steel shaft. A 4-ft. floating shaft drives a Lufkin N-128A High Speed Increaser, which in turn is close-coupled to a 300 hp. Universal Dynamometer.

The function of the Lufkin High Speed Increaser is to up rpm's to a point suitable for effective absorption by the dynamometer (a ratio of 6.5 to 1 increase). It is also worth noting that the speed of the steel rolls varies from 0 to 733 rpm, and that the Lufkin gear box increases the speed from 0 to 4770 rpm. (i.e. the speed range of the dynamometer.)

An operator sitting at a console outside the test lab controls monitoring equipment for engine rpm . . . manifold vacuum tests . . . rear wheel torque . . . engine water temperature . . . mph., etc. The console also houses the electronic road load computer.

Close to where the operator sits are three standard relay racks housing telemetering devices for recording the many variables established during testing.

J. W. Minder Chain & Gear Co. was the prime contractor for the assembly of mechanical components.

*HIGH SPEED INCREASER ups rpm's to a point for effective absorption by the dynamometer (.65 to 1 increase). The Lufkin gear box increases the speed from 0 to 4770 rpm.*



## PRODUCTION CONVERSION

### to complex missile work . . .

Here is how one company adapted its men, machines, and methods to the Space Age challenge . . .

**H**OW DOES A COMPANY convert from straight-line manufacturing to complex missile production?

This is the question to which Kaiser Aircraft and Electronics, Richmond and San Leandro, Calif., is seeking answers. For several years the Richmond plant has concentrated on profile milling and standard airframe assembly, while the San Leandro plant specialized in basic sheet metal work on propeller driven aircraft and helicopter parts.

Now missile work has been consolidated into the San Leandro plant. Richmond is still doing advanced profiling on aircraft structural components and has recently installed a five axis numerical controlled machine. Some equipment and supervisory personnel have been added to San Leandro to tool up for missile production.

*A MAZE OF JIGS aids assembly and assures a close fit of all missile parts. These jigs are accurate to 0.001 to 0.002.*

How well is Kaiser converting to this new work? Here are some steps the company has taken to meet this Space Age challenge.

**Production control**—Production and Material Control is more exacting. For instance, in specifying material for a part no deviation or substitutions are allowed. Procedures and changes are more critical and each phase of planning must be followed precisely.

Engineering changes have become more crisis-provoking. In this Space Age changes can come mighty fast. Sometimes they must be made now. As soon as Kaiser receives a change, the planning group meets. This group consists of an estimator, scheduler and a project engineer. They discuss the best means of putting the change into effect with as little lost time as possible.

Sometimes all work has to be stopped until changes are made. If there is lead time, the group plans the change so it will be incorporated into the work flow at a particular time. The old part may be made up to a certain operation . . . and when the operation is reached, all necessary production orders and operation cards will be ready to put into effect.

**Manufacturing Engineering**—Now, the practical aspects of changes and operating instructions are paramount. You can put down anything on paper; but will it work in actual practice? Kaiser believes there is a close correlation between shop theory and practice, because it brings most of its production planning and production control people up through the shop. They have worked on the machines; when they put something down on paper they know whether or not it will work.

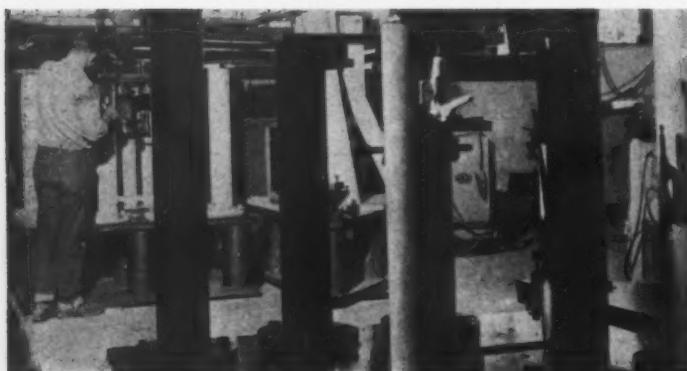
For instructions on a job, a production routing order maps every step. Each step is broken down on an operation card that lists specific details. The operation card not only tells what must be done, but it gives speed, feeds, tools and equipment to be used. Nothing is left to the operator's imagination. The advantage of the system is that it requires less supervision and assures a precision job.

But there are other problems. It is not uncommon to be confronted with new materials having unknown machining characteristics. Sometimes the new materials will require special provisions for control of dust or chips to prevent hazards to the operator or machine. The solution to dust and chip disposal has been solved by portable vacuum units that can be moved from machine to machine. Other times the materials may be extremely abrasive or may have a hardness in the range of cutting tools used.

Also not uncommon has been missile part configurations reflecting cutter paths that have never been previously encountered in the aircraft industry. New means of developing cutter paths must be worked out by the manufacturing engineer. Considerable ingenuity is required at operation and tool planning. For example, a milling head may be designed as an integral part of the tool.

The result of some of these changes has been closer team work among Production, Engineering, Quality Control, Production Control and Research and Development.

**Equipment**—Machining is more involved and pre-



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cise. Formerly, most of the tools were merely holding fixtures. But now tools have to be set up for co-ordinated machining, where the part is rotated at different angles for various cuts.

Tolerances have been shaved. Where in airframe manufacturing tolerances could be as high as .005 to .030... now tolerances have narrowed to .0003 to .005.

Of course, the men who design the tools and run the machines must have higher skills. And there is more floor inspection—sometimes after each operation. Also, the machines themselves have become more sophisticated.

Some new machines have been purchased. Larger lathes with tracer attachments have been added. And a new "Missile Master" which can machine missile cases up to 85-in. diameter by 300-in. long will be in operation. But a surprising amount of old equipment has been converted.

Right angle heads on horizontal milling machines make them more adaptable... a pattern bracket and a grinder on a milling machine allow it to make contours... tracer attachments give new flexibility to old lathes. On an old over arm mill, a double tracer attachment permits rise and fall and direction change. This allows for intricate contours on parts. Also, old drilling machines can now do new tricks with the addition of multiple heads and other attachments.

There is a higher degree of hand finishing. Finishing equipment added includes disc sanders, carbide burrs and many different types of grits and abrasives.

New timing devices, charts and calibration equipments have been installed on the heat treat furnaces. This permits more exact heat treating of carbon and stainless steels, all kinds of aluminum, magnesium, chrome molybdenum, and other quality metals being used.

**Welding**—Welding has expanded about 95%. Much of the old arc welding and brazing equipment has been adapted by adding on adjusting fittings and control valves. The basic power setup is the same although power has been increased. This is handled by more

lines of bus duct and more relays.

Some of the new equipment includes an automatic Heliweld (Air Reduction Co.) unit for long, accurate continuous welding (both longitudinal and contour), a P&H 500 amp. ac-dc arc welder, and a special Kaiser-devised rig for air operated feed for welding.

New wrinkles have been introduced in welding techniques. Instead of cold welding, now all parts and welding rods are preheated in ovens before welding. This prevents cracking and assures a smooth weld.

**Assembly**—Jigs—accurate to 0.001 to 0.002—are used through assembly. Even subassemblies are fitted up on jigs that are coordinate with final assembly jigs. In this way, parts are installed to the coordinate points and then welded or fastened together. This is like having a guide to a giant jig saw puzzle where every part must fit exactly to complete the whole picture. And these jigs are so accurate that if a part is off 0.001 it won't mate to the next piece to be installed.

Some of the jigs were furnished by the prime contractor and some were designed and built by Kaiser... as in one case where a bubble window on an old aircraft became the hood of a jig for sandblasting and welding.

**Painting**—Painting in the old way was standard spraying with regular aircraft enamel. But now a special epoxy paint and primer are agitated before spraying. And a bank of lights has been installed in the spray booth for quick drying.

**Handling**—The old wheeled carts have been equipped to handle missile parts. These carts consist of A frames with arms situated to carry the new parts. Wheeled cranes and other mobile units have been fitted with holding fixtures so parts may be rotated in any direction. The rotating feature is important in welding (where you want to weld in a down position) and in X-ray inspection where you have to inspect from various angles.

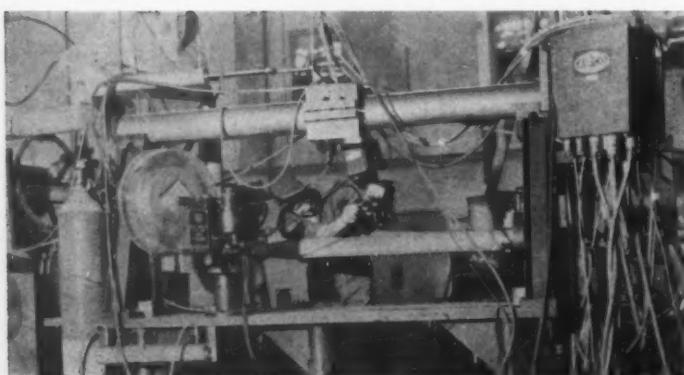
**Inspection**—Naturally, inspection is more critical. Whenever possible inspection takes place after each operation to assure that work is proceeding according to specification. Final inspection is conducted according to Air Force specification. These special tests include X-ray, pull test, Magnaflux, dye penetrant, sonic inspection, and air and hydrostatic test. For one test, Kaiser developed an inspection gage (something like a jig) for inspection of 14 coordinate points by transit.

**Security**—Security measures have been tightened. An old spray booth is being converted into a storage vault for parts. Rolling steel doors will be added and light panels will be covered. A plant security officer is on duty and personnel are undergoing security checks. Certain areas are now classified as are certain documents.

Add it up... and you'll see that a plant converting to missile production must become as precise and exact as the product it is to manufacture. In some cases you can adapt old equipment... in other cases you have to add new machines.

And—like Kaiser Aircraft and Electronics—you've got to learn new tricks and keep flexible to keep pace with the demands of this Space Age.

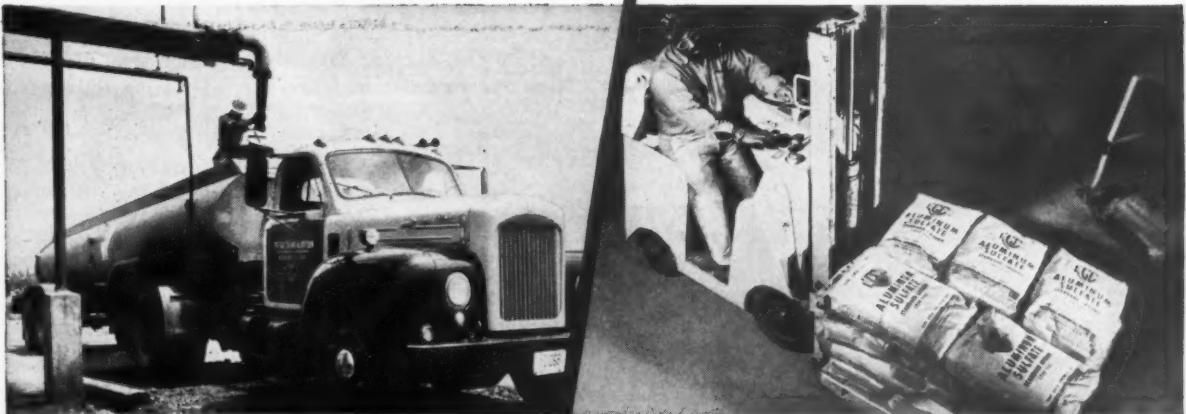
**COMPLEX WELDING SETUP** for the missile work. This unit is used for long, continuous welds. Welding has expanded about 95%.



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## CENTRIFUGALLY CAST parts save weight

Consistency, balance, heat and contraction problems solved . . .

**S**AVINGS OF UP TO 100 LB. in the weight of jet engine starter brakes has been achieved at the Salsbury Corp., Los Angeles, by using centrifugally cast stainless steel component parts.

The starter brakes rotate at a speed of 8,000 rpm; when open there is very small clearance for windage.

**JET ENGINE STARTER BRAKE**—at top is rough cut of casting prior to final machining. At bottom is brake as machined prior to installation.



It was necessary to find a method of casting the cone in the starter brake which would not only insure absolute consistency and perfect balance . . . but which would also stand rapid heat expansion and contraction from cooling.

After extensive research, engineers at the Salsbury Corp., found that 17-4 PH stainless steel parts cast by the Centrifugal Casting Co of Los Angeles, not only met consistency and expansion requirements, but incorporated 100 lb. of weight saving in the finished product.

The casting technique, as practiced by Centrifugal Casting Co., has a primary advantage over static sand casting. The centrifugal force creates greater fluid pressure in the mold, which in turn produces a much better casting.

A centrifugal casting is denser, free of gas, slag and shrinkage defects, and closer to dimensional specifications. And due to faster freezing via the chilling action of the steel mold, a finer grained metal with improved mechanical properties is obtained.

These castings are produced in specially designed centrifugal casting machines. Steel molds are used—within which the molten metal is subjected to a centrifugal compression force much greater than the maximum density produced by gravity.

In addition, the centrifugal process sets up a pressure gradient across the wall of the molten casting with more pressure on the outer diameter than on the inner diameter. Light non-metallics and gases are forced to the inner diameter of the casting, making it virtually impossible for the blow holes found in sand castings to exist in centrifugal castings.

## TRANSPARENT PACKAGING protects vital parts

Clear film allows handlers to see delicate areas of instruments . . .

**O**NE LOOK MAY BE WORTH A THOUSAND (words or dollars). That's the theory of the shipping department at the General Electric Co. Industry Control plant at San Leandro, Calif.

This theory was put into practice after the company received reports that delicate instruments on control panels that they shipped were damaged by freight handlers.

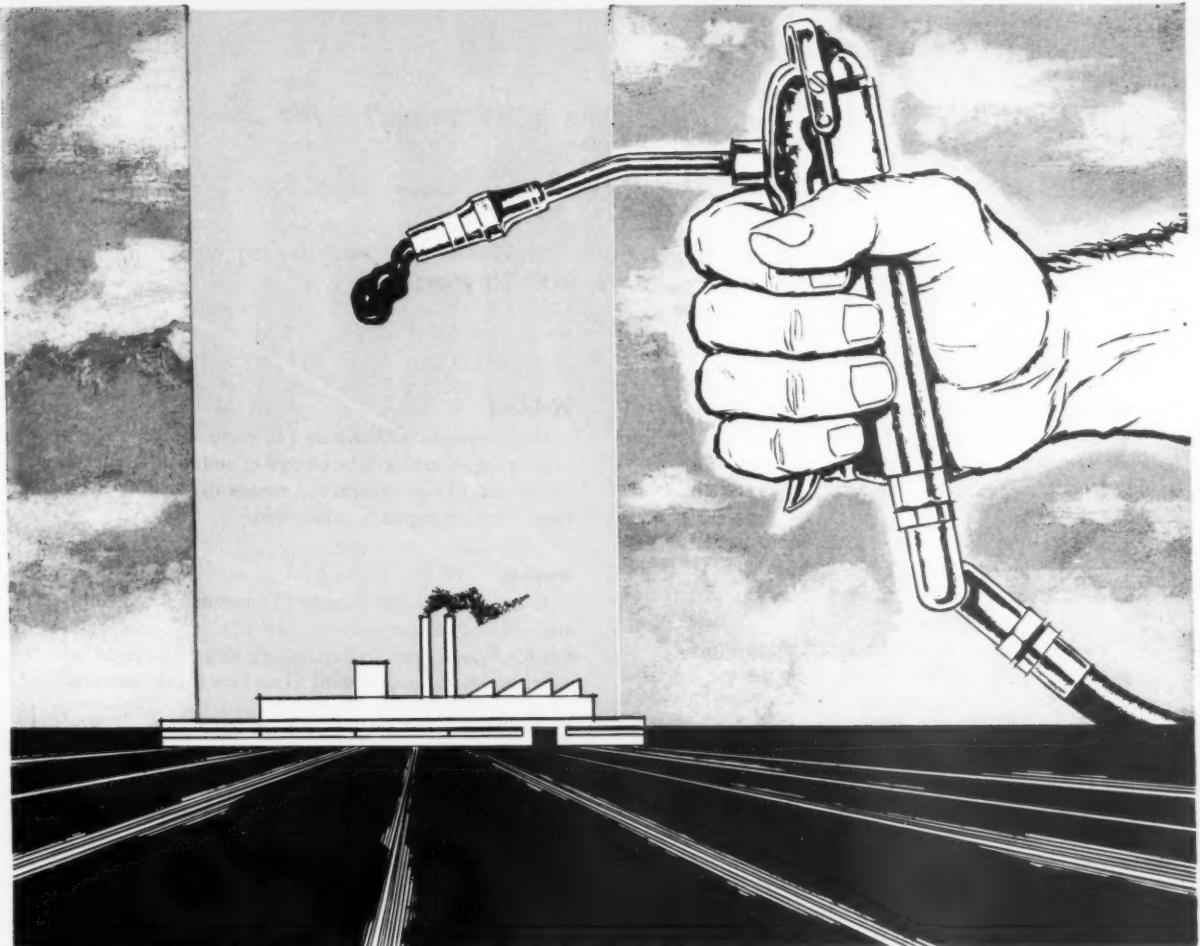
This was a result of the handlers not being able to see the critical areas. Originally, these units were housed in reinforced paper and then crated.

A novel packaging idea changed all this. General Electric began wrapping the units in clear polyethylene

film before crating. This gave them low-cost moisture-proof protection and made it possible to see the entire unit easily.

Since they started using this versatile film, General Electric reports that damage due to freight handling has virtually been eliminated. The film also permits last minute and arrival inspections without disturbing the crating. A further advantage to polyethylene film is its resistance to excessive heat or cold. It won't crack or break regardless of the temperature.

The "Visqueen" polyethylene film is made by the Plastics Division of Visking Co., Division of Union Carbide Corporation, Chicago.



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# WHAT'S AHEAD in Aerospace production?

Aerospace Industries Association predicts Western manufacturing and plant operating requirements for the next 10 years . . .

**T**HE ACCELERATING PACE of civilian and military development in the Aerospace Industry has resulted in an ever-increasing demand for a higher level of manufacturing capability — especially in the West.

New technologies and process complexities will require greater educational and technical specialization to produce the advance weapons concepts that the industry foresees in the next ten years.

The Aerospace Industries Association annual forecast of trends and requirements predicts that materials used during the next ten years will present a variety of problems to manufacturers. Some will be difficult to form (e.g. Beryllium), while others will require the use of new chemical or electrical discharge machining methods.

There will be a growing need for high fabricating temperatures and protective coatings to prevent contamination. Within five years, top service temperatures will be as high as 3000 F. for brief exposures. Within ten years, they will rise to 5000 F.

The use of new materials will also point up the need for new facilities. New and more complex processes will require better and more expensive equipment. In some cases, automation and numerical control must be adopted on a wide scale. Present handling and testing equipment will not be sensitive enough for future needs, and a new standard of quality control and data evaluation will have to be developed.

These and other problems facing the tooling and manufacturing industries during the next ten years are anticipated here in more detail under separate sub-headings. Further information may be obtained from the AIA, 7660 Beverly Blvd., Los Angeles.

## Assembly and Joining

Fabrication and assembly trends are toward steel brazed and welded airframes (see July and August WESTERN INDUSTRY for story on X-15 experimental rocket plane), and combined processes and machinery will be evident. For instance: Welding and machining in a welding positioner.

Two chief manufacturing and tooling problems will be (1) the necessity for achieving very close tolerances; and (2) brazing, welding, and heat treating in a carefully controlled atmosphere. Precision and sub-assembly tooling will be required to locate details through brazing and heat treating processes and produce a stress-free, dimensionally-accurate unit.

## Welding

Requirements will include (1) close control of manufacturing variables; (2) clamping and positioning devices; and (3) economical means of welding under controlled atmospheric conditions.

## Brazing

Requirements will include (1) means of controlling atmospheric contamination, and (2) improved facilities for brazing new materials and larger units. In addition means of establishing close control of manufacturing variables must be found.

## Bonding

New tooling concepts must be developed to cope with new materials and designs. Emphasis will be on the use of ceramic adhesives and bonding extremely low contoured parts . . . perhaps even entire assemblies . . . such as wings or fins.

Bonding of steels will become commonplace, as will bonded structures capable of withstanding temperatures of 600 F., with ceramic adhesives replacing organic-metallics for service above 600 F.

Numerical control concepts may be applied to yield economical and reliable bonded structures.

## Fasteners

High-strength, corrosion-resistant fasteners must be developed for extremely low temperatures and upset riveting of 320,000 psi. materials. If rivets and sheet stock are made of materials up to 320,000 psi., it will be necessary to develop squeezers and dimplers capable of applying a force much higher than is presently available, and they will have to be designed to withstand much higher heats.

Adaption of hot forging techniques making use of resistance heating may be feasible. Methods will be needed for dimpling high strength materials having low ductility at room temperature. Hot dimpling equipment capable of 1300 F. operation will be needed.

## Metal Shaping

During the next ten years, as more emphasis is placed on developing high-strength steels with yields of 300,000 psi., and titanium alloys with yields of 200,000 psi., fabrication techniques and equipment will be needed which place the metal as close as possible to its final configuration.

The room temperature properties of these materials

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d dictate the use of elevated forming temperatures and essentially eliminate finish hand forming.

Shaping materials cold and hot is trending toward higher accuracy, semi-automated equipment with precise control elements. Explosive and bulge forming are indicated for further development.

### Materials Removal

Some operations (e.g., shearing, blanking, machining) now performed at room temperature will have to be done with materials and/or tools heated or at sub-zero temperatures. Some metals and practically all of the ceramics and cermets cannot be machined with ordinary tools. They will require ceramic tools, abrasive grinding, ultrasonic machining, or electrical discharge machining.

Generally speaking, the trend of manufacturing equipment is toward more specialized semi-automatic, automatic and numerically controlled machine tools, assembly and processing equipment.

### Plating and Cladding

Trends indicate considerable development is required in plating, coating and cladding and in the development of automatic systems to control the processes. Non-detrimental plating or cladding processes should be developed to withstand 1200 F. These should include vapor plating, alloy cladding, electrolytic and electroless plating.

### Heat Treatment

Materials will be needed for tempering and heat treating fixtures (preferably of minimum mass) to control parts at heat treating temperatures. Also required will be equipment for annealing or heat treating large components above 2000 F. in closely controlled atmospheres.

Within the next five years, heat treat procedures for high alloy materials (e.g., peerless, 1-1570, incoloy 90) and methods for simultaneously heat treating, forming, tempering, and stress relieving must be developed.

Within ten years specialized automatic heat sources for preheat, stress relieving, and heat treatment in welding fixtures must be developed to become part of the welding procedure.

### Powder Metallurgy and Fibrous Materials

Impregnation hardening of new materials must be established within the five year period. Similarly the welding of fibrous materials used for transpiration cooling must be investigated and developed as a reliable, economical process. Within ten years, fabrication of pressure vessels by processes utilizing powder metallurgy must be developed.

### Non-Metallics

With the need for high-temperature materials developing rapidly, processes and tooling for applying non-metallics must be developed accordingly. Non-metallics will become common in tools and process equipment. They will also be fabricated into structural components, though their structural applications must first

be established. Such applications are highly desirable because of the capability of the materials to withstand high temperatures, radiation, erosion, and corrosion.

### Material Handling

Techniques and equipment will have to be developed for special handling of many materials. Materials formed at elevated temperatures must be protected from atmospheric corrosion. Wide, extremely-thin sheet material must be transported without deformation.

Exhaust and filtering systems will be widely needed to reduce health hazards in processing toxic materials, such as Beryllium.

Any use of radioactive materials will require special automatic or remote control machines; controls for chips and coolants; insulating materials; measuring methods or gages; and waste disposal equipment and techniques.

### Electrical

Developments in this area within the five-year period will include a gradual transition to numerically controlled equipment. Within five years development also must include equipment for fabricating wiring required for service at 1200 F.

This could involve special equipment for bending high-strength insulating materials or metallic-sheathed, high temperature insulated conductors.

### Electronic

Over the five-year period, machine soldering processes must be developed to include improvements in icicle control, positive definition of joint quality, and inspection methods. Generally, equipment will have to be more automatic.

In the ten year period there must be further development of flexible and/or multiple-layer circuit cards and associated processes and equipment for operating temperatures in the 1000 F. range. This will involve new insulating sheet material, new adhesives, and new processes and equipment for component lead termination.

Mechanical or welding tools or a combination of them will probably have to be developed for lead termination for the 1000 F. range.

### Testing

The trend toward a miniaturization and integrated system packages in the end product will require functional test equipment with increased accuracy and higher reliability. Such equipment will be internally complex but must be externally simple in order to reduce operator skill requirements.

### Inspection

Improved inspection techniques and equipment in all areas will develop as new materials become more familiar. Particularly needed, however, is extensive study to incorporate non-destructive, assembly inspection devices into assembly tools. Also needed in the near future is a fast and accurate, non-destructive inspection method for honeycomb panels.



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## STEAM TRAPS help boost production

New impulse traps fit into small space, are highly effective . . .

**L**ITTLE THINGS CAN ADD UP to a big production increase.

When Lady's Choice Foods moved into a newly modernized plant in San Leandro, Calif., it wanted to lay out the plant and to select appropriate equipment to boost production significantly.

Maybe even Lady's Choice Foods was surprised when production capacity was quadrupled!

Among the pieces of equipment responsible for this production increase were new impulse steam traps.

Steam traps are vital to food processing. They hold steam under cooking vessels long enough to transfer heat to the food being cooked. Then the steam trap releases condensate back to the boiler. The effectiveness of the steam trap is paramount. Steam must remain just the right length of time, and the condensate must be removed at once . . . or else the cooking time and flavor of the food will be affected adversely.

That's why Lady's Choice investigated the best types of traps for its use and settled on the new impulse type.

Jack McFeron, plant superintendent, explains: "In deciding on a steam trap we had to consider these two factors: (1) size and (2) effectiveness. We had engineered our cooking facilities into a compact, efficient arrangement that allows us to mix, blend, and cook in about half the time formerly required. And we had to make sure the trap selected would fit into a small space and wouldn't require support work."

The company finally selected Yarway (Yarnall-Warren Co.) impulse steam traps for very heavy condensate loads.

These traps are engineered for working steam pressures up to 600 psi., maximum temperatures of 750 deg. F. They operate against back pressures at trap outlet up to 40% of pressure at trap inlet.

A valve-disc assembly is mounted on a flat seat and operates on rolling fulcrum.

Some 30-35 steam traps of this type are working throughout the plant. And they are helping the plant to reach a production capacity of 6,000 cases of syrups, bleach, vinegar and oils a day.

## 10 SAFE YEARS for tool grinding section

Housings, guards, special devices supplement strict safety rules . . .

**O**VER 10 SAFE YEARS have been achieved by the Tool Grinding Section of the National Supply Co., Torrance, Calif.

This is even more of a spectacular feat when you consider the extensive machine tooling and complex nature of operations at this plant. A much wider diversity of grinding tools and machines is in service at this plant than ordinarily found in machine shops.

And that's why "safety is a must." Every conceivable safety practice is followed. These include a well-planned department layout, adequate material handling facilities, proper illumination and ventilation, clean equipment and work benches, and uncluttered aisleways.

A strict requirement is wearing of safety goggles by operators when operating machinery. Among other special precautions for health and safety is a master

exhaust and dust collection system. In the shop each machine on which there is an exposed grinding wheel is equipped with a slightly concave shield, approximately 2x3 ft. in size and painted a light color to reflect light near the operation.

A simple housing for the spindle end of a grinding wheel prevents clothing from catching. A hardened steel disc, conforming to the recess of the abrasive wheel, and attached with four screws 1/32-in. below the face of the wheel, adds a safety measure. Another measure is the addition of a secondary table rest to fit closely around the abrasive wheel of a grinder. This covers holes in the original rest and prevents tools from being accidentally dropped.

These simple but effective ideas—have greatly contributed to the long safety record set by this plant.

*UNSAFE before housing was installed . . .*



*SAFE with housing over spindle end . . .*





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## FLEXIBLE HANDLING

### for Space Age products . . .

New handling system keeps turbochargers surgically clean . . . adapts to the many different sizes of the parts . . .

**H**ANDLING TURBOCHARGERS was a problem at The Garrett Corp.'s AiResearch Industrial Division in Los Angeles—until a new system was recently installed.

Previously, a system of overhead conveyors was used which proved advantageous in handling large units . . . but not flexible enough in transporting the various sized turbochargers being manufactured to fill rapidly expanding orders.

A prime disadvantage, as described by Wilton Parker, general manager of The Garrett Corp.'s AiResearch Industrial Division, was that the overhead conveyors were a dirt catcher. Turbochargers—in order to function at maximum efficiency—must be surgically clean.

The firm found that dust from cast iron machining taking place in the production area was getting on bearings and later, after the turbochargers were put into use, acting as an abrasive. There was no way of protecting the part while it was on the overhead conveyor.

The only way of defeating the problem was to put in a clean room where dust is done away with by keeping the pressure high enough inside the room to

ensure that all the airflow is OUT. And that meant redesigning the handling system.

The result was development of a flexible system of steel pallets and mobile tables in place of the overhead conveyors.

Turbochargers are now loaded onto steel pallets equipped with six tubular support poles on which the units are threaded for stacking purposes. They are then delivered to the assembly area by fork lift truck, packed in boxes to prevent contamination.

From assembly they are put on caster mounted tables and wheeled to inspection, cleaning and shipping.

The tables are 2½ x 10 ft. and will later be reduced to 5 ft. in length to make the handling system even more flexible.

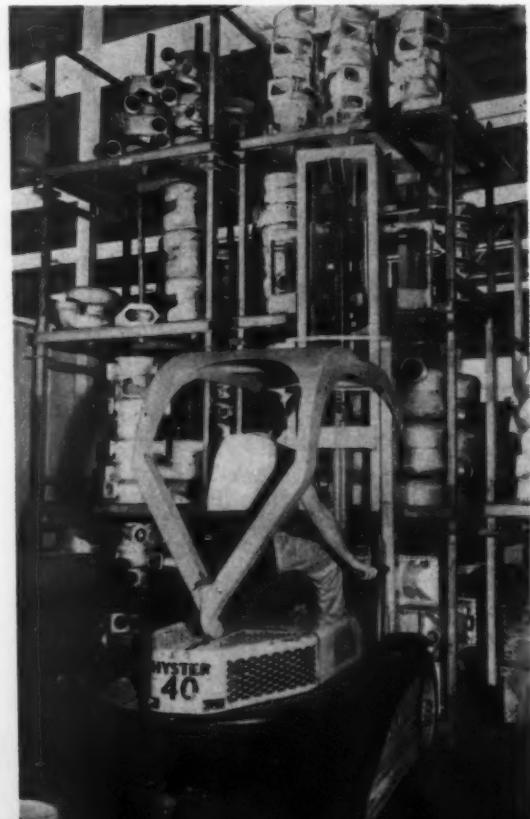
Pallets are 4 x 6 ft. and are equipped with corner supports to enable stacking with a full load, which does away with the need for storage racks.

Advantages of the new system center around its flexibility. Previously, units were stored on the overhead chain conveyor, which was convenient when total number of units handled averaged about 20 per day.

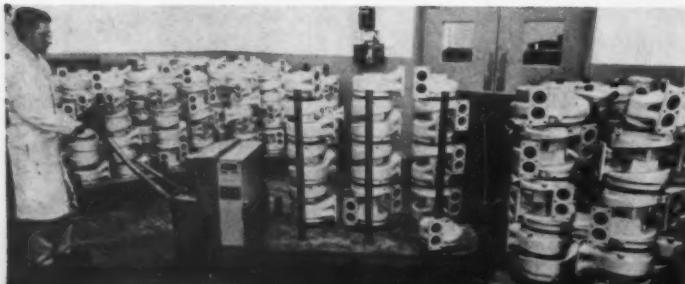
Now, with 200 or more turbochargers or 27 different models being handled daily, storage of the kind previously used would have been out of the question.

Another advantage is that in testing, units can be stored in composite groups, which was impossible under the old system.

*STACKING of steel pallets with corner supports attached. They can be stacked fully loaded for storage. Note that no racks are required.*



*STEEL PALLETS have poles on which turbochargers are threaded to facilitate stacking. The pallets make for more flexible handling.*





**Announced in June—**

**Hyster monotrol trucks are already at work in warehouses and industrial plants from coast to coast.**

Acceptance of the new Hyster SpaceSaver 3,000, 4,000 and 5,000 lb. trucks with *Monotrol* control system is even exceeding earlier expectations. In warehouses and industrial plants from coast to coast the new Monotrol trucks are setting new standards of production, safety, and handling economy. The ease of moving more tonnage with less operator effort and greater safety is the story being told by each new owner.

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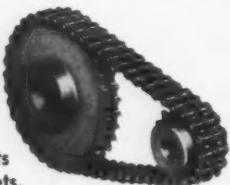


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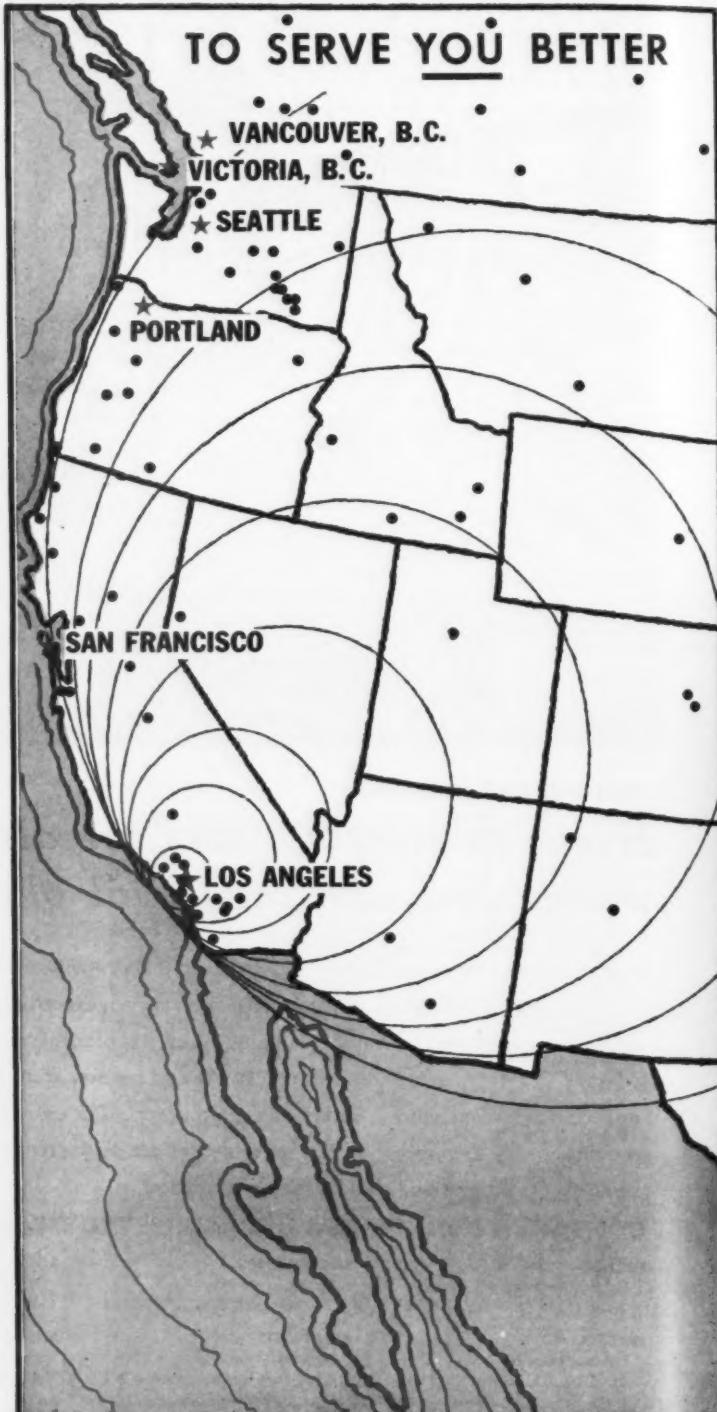
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See listing in Directory Section

## TRAIL-BLAZING PRODUCTION

### to meet Western conditions . . .

This firm has developed new techniques and equipment so its products can survive in severe Western weather . . .

THE WEST MAKES SEVERE DEMANDS on equipment exposed to the elements. Equipment must stand up under corrosive conditions in coastal areas swept by salt air—hot dry deserts—below zero temperatures.

That's why Hill Transformer Co., San Carlos, Calif., has incorporated special features into its transformers. But anything out of the ordinary production path requires trail-blazing production techniques and manufacturing equipment.

Hill has both. Here are some of the features and processes the company has developed for Western use of its equipment.

To prepare the outside tank surfaces, a phosphatizing process is applied after grit blasting each tank. Phosphatizing guards against the infiltration of metal corosions, seals off damaged areas, and provides an excellent bonding agent for the paint.

In painting, a special epoxy resin paint—Eponal—is sprayed on to provide maximum protection against

all Western weather. The paint is applied in an air-filtered paint spray booth equipped with an under-floor moving waterpool over which all air in the booth is exhausted. The combination of filtered air and water flow guarantees that no dust or dirt contaminates the painting process.

Internal cover clamping eliminates the use of any external clamps that could fracture the painted surfaces. Desired cover gasket compression is assured by mechanical stops in the clamping arrangement. Every transformer cover is equipped with a handhole cover having a single captive clamping bolt engaging an internal swing-out clamping bar. Thus, only one bolt is unfastened to gain access for changing taps or inspecting the transformer internals.

Tanks at Hill Transformer are manufactured in the Company's tank fabrication shop which is equipped with shears, drilling and boring machines, vertical press-brake for bending plate, etc., power operated rolls for forming cylindrical tanks, circular cutting and flanging machines for turning the edges on tank covers and bottoms, boss-stamping machines for flattening outside tank surfaces where side-wall bushings are mounted, and other equipment required in an up-to-date tank fabrication shop.

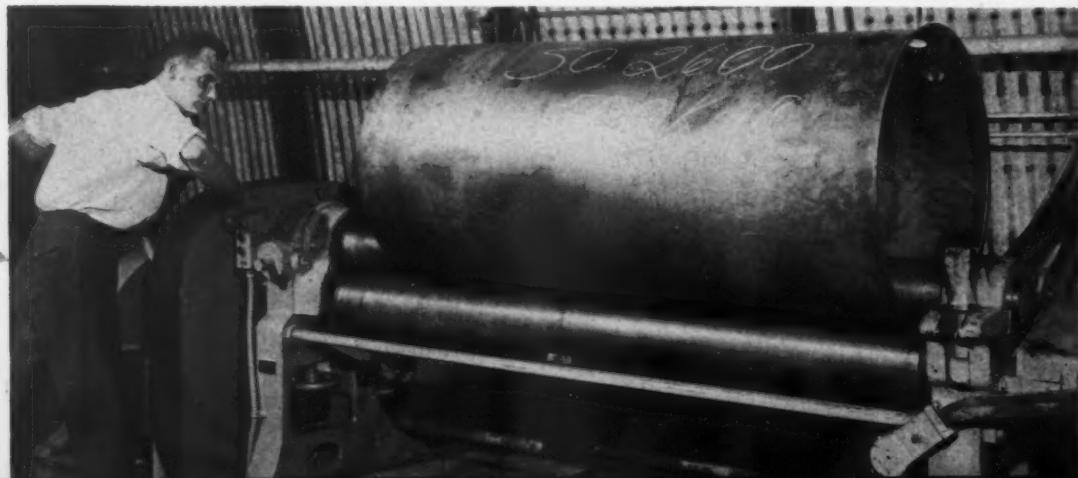
The bottom edges are triple thick, turned and welded, rather than single thickness. This provides greater strength and safer handling.

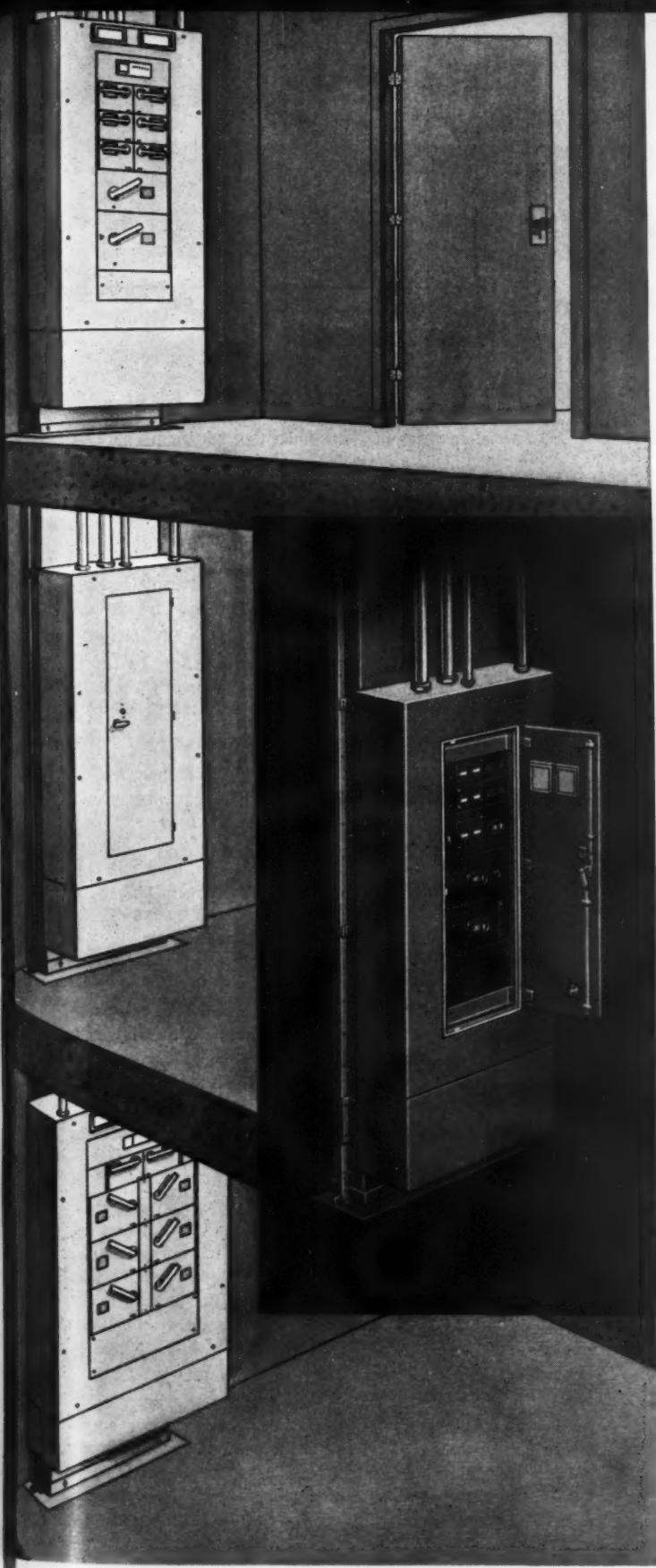
The core coil unit is held secure within a steel channel framework, which in turn is held steady by a bossed fitting being fitted into a supporting boss stamped into the tank bottom. This, together with two upper sidewall supports, assures the entire core coil unit being held steady during shipment, mounting and operation.

To assure a high degree of accuracy in the manufacture of its coils Hill Transformer winds them on machines of its own design and manufacture. Each of these eight machines (of variable speed forward and reverse) is equipped with its own motor-operated reel carrier, for winding the medium and larger sizes of coils. Six small machines are used for winding smaller coils.

Hill's core shop is equipped with annealing ovens for reprocessing the oriented grain core-steel and other equipment to produce efficient cores for modern transformers.

**TANK FORMING**—This Hendley and Whitmore machine with 6-in. rolls forms 500 kva. tank. Bottom edges of tank are triple-thick, turned and welded.





*Power to  
the sky with*  
**RISER DUCT  
BY BULLDOG**

Now, there's a *sure* way to get ample power as many stories high as you like — BullDog's new combination of high-performance Lo-X® duct and integral-mounted power panels.

It's a system where a low, balanced voltage-drop can be predetermined . . . where power loss is minimized . . . and where each duct section has an extra reserved current capacity inherent in its construction.

**Other advantages:** Power may be tapped off through the compact panels at *any joint* on the duct. Panels bolt easily to the bus bars . . . are available with I-T-E Molded Case Circuit Breakers through 800 amperes or with BullDog's famous Vacu-Break® Switching Units through 600 amperes. Provisions for current-limiting Amp-traps\* are optional to protect against dangerous high short circuit currents. And most panels have space for adding future circuits when the need arises.

Choose wisely, choose the finest. Choose Integral Panel—Lo-X Riser Duct by BullDog.

\* Chase-Shawmut registered trademark



**BULLDOG ELECTRIC PRODUCTS DIVISION**  
**I-T-E CIRCUIT BREAKER COMPANY**  
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Cleyston Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

Consult the following Pacific Coast representatives:

**Coast Electric & Manufacturing Co.**  
1733 N. E. Seventh Ave., P. O. Box 7712  
Portland 12, Oregon

**Young Electric & Mfg. Co.**  
2134 Curtis St.  
Denver 2, Colorado

**Safety Switchboard Company**  
910-89th Avenue  
Oakland 21, California

**BullDog Elec. Prod. Co. of Los Angeles**  
2885 E. Washington Blvd.  
Los Angeles 23, California



# SPECIAL MANUALS

FOR YOUR FREE COPY, CIRCLE APPROPRIATE KEY NUMBERS ON POSTCARD, p. 99

## AIR COMPRESSORS

### Modern axial compressors

How modern axial compressors provide a profitable solution to a wide range of air or gas handling problems is described in this 12-page manual. The literature covers units for any application from 8,000 to 1,000,000 cfm. Large photos help tell the story. *Allis Chalmers Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 150

### Three specialized compressor publications

Three comprehensive publications have been issued detailing the operation, maintenance and lubrication features of three stationary compressors. One bulletin offers information on horizontal duplex motor-drive compressors for pressures to 15,000 psig. and sizes to 5000 hp. Another bulletin details the package-type stationary compressors. These are available from 501 to 1663 cfm. at 80-125 lb. pressure. The third bulletin outlines design details and operation of the horizontal balanced-opposed stationary compressor. These are capable of developing 5000 hp. for pressures up to 15,000 psig. *Chicago Pneumatic Tool Co.*

... FOR YOUR COPY, CIRCLE NO. 151

### Heavy-duty compressors from 60 to 600 hp.

They're big and they're powerful. The diesel compressors pictured and described in this manual can supply air needs where other compressors fail. A sectional view on the center spread points out some of the reasons why these compressors can do the job. Much information is given on applications, installation, and maintenance. *Atlas Copco Pacific, Inc.*

... FOR YOUR COPY, CIRCLE NO. 152

### Heavy duty industrial air compressors

Specifications and dimensions for six basic heavy duty industrial air compressor models are described in this manual. Models range from 350 to 1250 hp. and 2418 to 7392 cfm. Semi-radial design features are clearly exhibited in a two-page cross-section drawing. Installation photographs reveal the compactness of the compressor. *Joy Manufacturing Co.*

... FOR YOUR COPY, CIRCLE NO. 153

### Stationary air compressors without foundations

No elaborate foundations are needed for the stationary air compressors described in this 16-pager. The compressors run so smoothly that they don't need to be fastened to the floor. This makes them easy to move and relocate. They're compact, too. Complete specifications and instructions are packed into this booklet. *Schramm, Inc.*

... FOR YOUR COPY, CIRCLE NO. 154

← for more details, adv. pg. 33, circle No. 31  
See listing in Directory Section

54

### Base mounted air compressors

Base mounted air compressors (15 and 20 hp. — two-stage, air-cooled) are detailed in this booklet. There are 26 special features of these units that set them apart. All these advantages are spelled out and all specifications are listed. *Curtis Manufacturing Co.*

... FOR YOUR COPY, CIRCLE NO. 155

### Devices and fundamentals of air circuitry

Various types of pneumatic controls are explained and illustrated as to function and application in this 24-page booklet. Basic control theory is discussed. Numerous drawings back up points covered. *Westinghouse Air Brake Co., Industrial Products Division.*

... FOR YOUR COPY, CIRCLE NO. 156

### Single, two-stage air cooled compressors

In these 16 pages, you get the complete facts on air cooled compressors for all types of service. Large photos pave the way for the technical data that follows. You'll like the "How to select an air compressor" section. It lists air consumption for 30 common shop jobs, then tells you how to figure your compressor needs. *Gardner-Denver Co.*

... FOR YOUR COPY, CIRCLE NO. 157

### Rotary compressor with "flip-top" design

You can get all the facts you want on this sliding vane-type, single-stage rotary air compressor. The rust-proof aluminum "flip-top" housing, in addition to offering full-view servicing and maintenance, allows this 75 cfm. compressor to be the lightest of its kind offered. Dry weight is only 1605 lbs. *Le Roi Division, Westinghouse Air Brake Co.*

... FOR YOUR COPY, CIRCLE NO. 158

### Fundamentals of compressed air

If you have any questions about compressed air you'll find the answers in this 16-page handbook. Clever line drawings help put across some fundamental and advanced points. Then after you've learned what compressed air is and how it is compressed, you can find out how to select an air compressor. The charts make it easy. *Ingersoll-Rand Co.*

... FOR YOUR COPY, CIRCLE NO. 159

### Portable compressor for extra long life

Although this air compressor was designed for spray painting systems, it can be used for a wide range of industrial applications. The engine is constructed for extra long life and will outlast most other engines rated at the same horsepower. Two models are offered; one for 50 to 60 psi. and the other for 70 to 80 psi. Complete facts and specifications are available. *Binks Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 160

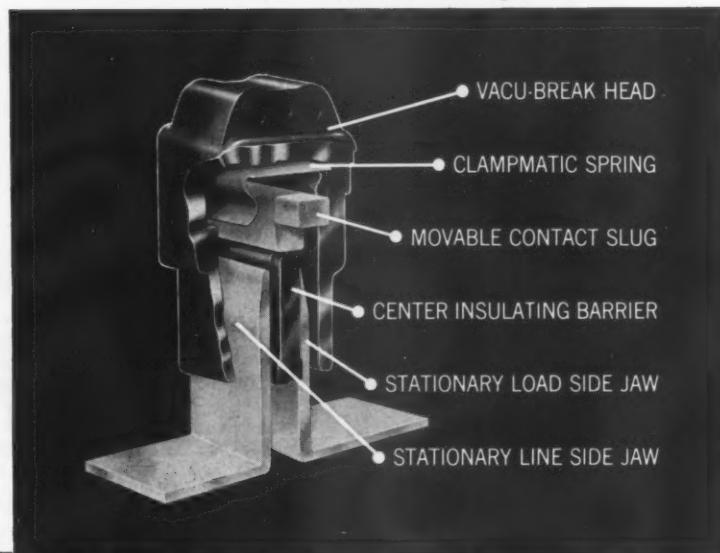
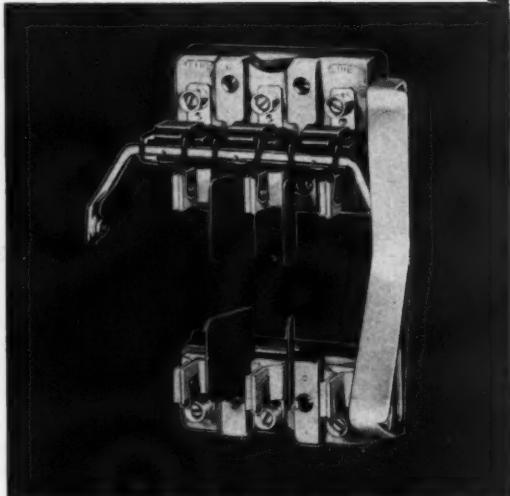
# FOR SAFETY'S SAKE BUY VACU-BREAK

There's a big difference in safety switches—a difference between maximum safety and halfway safety—low maintenance and excessive maintenance. These differences are readily apparent when you look at the design and operation of the BullDog Vacu-Break Clampmatic\* Safety Switch.

**THE VACU-BREAK:** Contacts are housed inside compact arc chambers which have very little air space. When contacts are "broken" under load, arcs can't build up because of the lack of oxygen. Pitting and burning of the contacts are reduced to the absolute minimum. Maintenance is virtually eliminated.

**POSITIVE SWITCHING:** For positive safety, the Vacu-Break switching mechanism does not rely on tricky toggles or springs to trigger the disconnect operation. The operating handle is directly connected to the contact heads by means of a sturdy metal rod. Push the handle "OFF" and the switch is off!

Vacu-Break heads are connected directly to the switch handle. No toggles or triggers . . . no tricky springs. No danger of switching failure, either. One of several exclusive BullDog Vacu-Break features that set the performance standards for the industry.



Close-up of Vacu-Break head shows movable contact slug inside the compact, oxygen-limiting arc chamber. Clampmatic spring assembly assures bolt-tight contact, speeds "break". This combination guarantees positive, safe operation, long switch life.

**WITHSTAND 100,000 AMP FAULT CURRENT:** Vacu-Break Clampmatic switches equipped with current-limiting type Amp-Traps\*\* were subjected to 100,000 amp short circuit current. The switches were undamaged.

*Play it safe!* Compare, recommend, buy . . . BullDog Vacu-Break Clampmatic Safety Switches. They cost no more than other switches . . . yet give you the maximum in safety and performance.

\*Vacu-Break and Clampmatic are registered trademarks of the I-T-E Circuit Breaker Company.

\*\*Amp-Trap is a registered trademark of the Chase-Shawmut Company.



**BULLDOG ELECTRIC PRODUCTS DIVISION**  
**I-T-E CIRCUIT BREAKER COMPANY**  
**BOX 177 • DETROIT 32, MICHIGAN**

In Canada: 80 Clayton Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

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1733 N. E. Seventh Ave., P. O. Box 7712  
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Safety Switchboard Company  
910-89th Avenue  
Oakland 21, California

BullDog Elec. Prod. Co. of Los Angeles  
2885 E. Washington Blvd.  
Los Angeles 23, California

## CLUTCHES, FLUID DRIVES

### Data sheets on magnetic-particle clutches

Quick and useful engineering data on a series of magnetic-particle clutches are yours in these data sheets. Each sheet describes a series of these magnetic-particle clutches. Each also contains a chart showing torque vs. excitation . . . typical installation drawings . . . complete specifications. Each unit is pictured. *Lear, Inc., Grand Rapids Division.*

. . . FOR YOUR COPY, CIRCLE NO. 161

### 136 pages of power transmission products

This book is thick with selection and application data on a wide range of power transmission items. Included are drive selections, roller chain attachments, double pitch attachments, sprockets, silent chains, flexible couplings, cam clutches, etc. Complete specifications are listed, and photos, engineering drawings, and tables help round out the picture. *Morse Chain Co.*

. . . FOR YOUR COPY, CIRCLE NO. 162

### 328 pages on mechanical power transmission

These 328 pages contain helpful information, including sectional drawings, dimensions, weights, prices, application details and engineering tables. It is virtually a handbook on the subject of mechanical power transmission. Eight full pages are devoted to a detailed index of all material for quick and easy reference. *Dodge Manufacturing Corp.*

. . . FOR YOUR COPY, CIRCLE NO. 163

### Complete line of Electro Clutches

Design, application and accessory information on a complete line of Electro Clutches is detailed in this 20-pager. Included is the new self-adjusting stationary field type unit. The booklet also contains specification charts for each type of clutch. *I-T-E Circuit Breaker Co.*

. . . FOR YOUR COPY, CIRCLE NO. 164

### Magnetic-friction clutches and brakes

New highs in efficiency and new lows in maintenance are claimed for the magnetic clutches and brakes detailed in the eight-page brochure. Large cutaway photos let you see the workings of these units which are self adjusting and easily controlled. Charts give dimensions. *Dynamatic Division, Eaton Manufacturing Co.*

. . . FOR YOUR COPY, CIRCLE NO. 165

### Engineering data on electric clutches, brakes, controls

Fold-out selection and application charts . . . engineering drawings . . . and specifications and dimension tables tell the story about electric clutches, brakes and controls for a wide variety of industrial applications. All units are pictured. *Warner Electric Brake & Clutch Co.*

. . . FOR YOUR COPY, CIRCLE NO. 166

### Clutches for over-running, backstopping, indexing

Drawings and photos of each unit help tell the story in this booklet. Then a complete section on engineering and dimensions . . . installation and maintenance . . . ordering . . . supplies you with all the details. *Formsprag Co.*

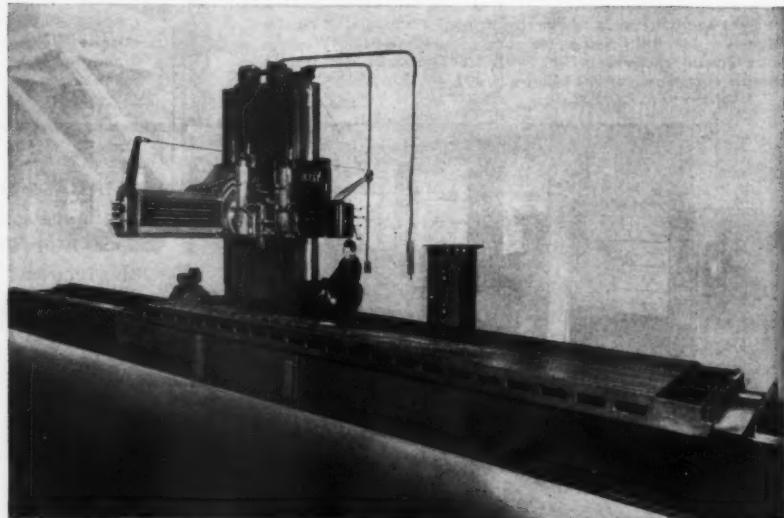
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# MOORE FACILITIES

### Giant Planer Cuts Machining Cost

#### Cut costs! Speed production!

Moore does both with a heavy duty openside planer. It's part of the all-inclusive machining facilities at Moore which emphasize use of special and heavy duty tools, such as large vertical and horizontal boring mills, lathes, grinders, and many others. Let your machining job benefit from Moore's 50 years of experience. Consult Moore...for one-stop, one-shop machining requirements.



Forging • Heat Treating • Machining  
Plate-Sheet-Pipe Fabrication • Grinding  
Structural Steel Fabrication and Erection

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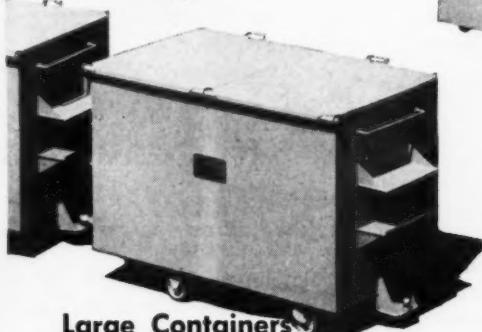
WESTERN INDUSTRY/SEPTEMBER 1959

# cut disposal costs by two-thirds...

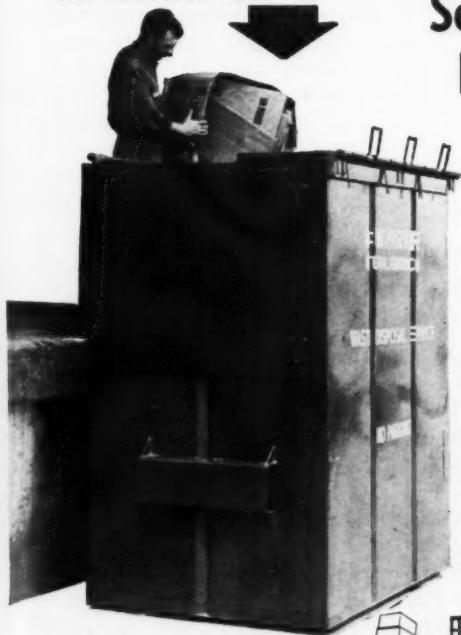
## Containerize Waste as it Accumulates...

Patents Pending

Small Tracking  
Containers for  
Indoor Use...



Large Containers  
for Outside Use ...



Mfd. By  
**DEMPSTER BROTHERS**  
Inc.

## Self-Loading **DEMPSTER-DUMPMASTER** Handles 6 Sizes of Containers...

If you're using boxes, bins, cans or carts to handle or store big-volume waste and refuse, you can reduce costs by more than two-thirds with the new DEMPSTER-DUMPMASTER System of waste storage and collection.

One Dumpmaster serves any number of detachable metal containers placed at waste accumulation points. Making its rounds, the Dumpmaster picks up each container, in turn, empties the contents into its packer body and compresses the material to a fraction of its former volume assuring big pay loads on every trip to the disposal area.

The DEMPSTER-DUMPMASTER is economical! One man operation. It's safe! Clearance lifting arms never pass the cab windows, can't injure operator. Containers can be used indoors or outdoors, on ground, below grade or on a dock.

This system is also available on a monthly fee basis through a nearby DEMPSTER-DUMPMASTER equipped private hauler, (name furnished on request).

WRITE TODAY FOR FREE BROCHURE



**Dept. WI-9 DEMPSTER BROTHERS, Knoxville 17, Tennessee**

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# HELPFUL LITERATURE

FOR THE WEST'S PLANT OPERATING EXECUTIVES

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CIRCLE APPROPRIATE KEY NUMBERS ON POSTCARD, P. 99

#### 44-PAGER DETAILS PARALLEL SHAFT TYPE GEAR REDUCERS

This 44-page spiral-bound bulletin about parallel shaft type gear reducers gives you selection and ordering instructions, formulae, dimensions, rating tables of several kinds, information about accessories, tips on installation and lubrication and facts on custom applications. Tables are for application classification, mechanical and thermal horsepower ratings and overhung load capacity. Illustrations include six pages of drawings with parts designation for various models of reducers. *Western Gear Corp.*

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#### EIGHT-PAGER DESCRIBES SEALANT FOR DIFFICULT EXPANSION JOINTS

If you're looking for a sealant for joints requiring an absolute watertight seal, you'll find it worthwhile to read this eight-page bulletin on Hornflex Thiokol—LP-32. A synthetic rubber compound, it can solve the problem of difficult expansion joints and is especially effective in curtain wall construction. The booklet includes tables, directions for application and mixing, plus other helpful information. *A. C. Horn Companies, Div. of Sun Chemical Corp.*

... FOR YOUR COPY, CIRCLE NO. 176

#### 94-PAGE CATALOG OF PRECISION MEASURING TOOLS AND INSTRUMENTS

This 94-page catalog about precision measuring tools and instruments has a quick index showing general sections of the book, plus both an alphabetical and a numerical index. Generously illustrated, it covers precision measuring tools of all kinds, optical measuring instruments, gear testing equipment and machine tool specialties. Reference tables and a price list are included. *Scherr-Tumico Co.*

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#### DATA ON TWO TYPES OF SNAGGING WHEELS FOR PORTABLE GRINDERS

In this catalog bulletin about snagging wheels for portable grinding machines you'll find data on popular sizes, shapes and standard grain and grade specifications for straight wheels, cup wheels and abrasive cones. It describes regular resinoid for high speed grinders and vitrified bonded abrasive wheels for low speed grinders. *Simonds Abrasive Co.*

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#### 288-PAGE STOCK LIST COVERS ALL TYPES AND FORMS OF METALS

In this comprehensive metals stock list you'll find all types of metal—carbon and alloy steels, aluminum, brass, copper bronze and stainless steels—in every form—sheets, plates, coils, strip, wire, rods, bars and structurals. The 288-page book also provides facts on the firm's complete cutting and grinding service—shearing, slitting, sawing, flame-cutting and blanchard grinding—and has an indexed data section that includes metallurgical terms, production charts, etc. *Ducommun Metals & Supply Co.*

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#### 48-PAGE CATALOG COVERS FULL LINE OF STOCK GEARS

This comprehensive 48-page gear catalog is designed to simplify your selection of gears, flexible couplings, universal joints, collars, etc. The first half is devoted to specifications and illustrations of the various products; the second is given over to engineering data . . . gear formulae, horsepower and torque, strength of gear teeth, and a variety of tables. This Union Gear & Sprocket Corp. catalog is available through *Power Transmission Equipment Co.*

... FOR YOUR COPY, CIRCLE NO. 180

#### BULLETIN DESCRIBES HEAVY-DUTY AIR AND HYDRAULIC CYLINDERS

A double-page cutaway with 15 design features identified is a highlight of this eight-page bulletin about heavy-duty air and hydraulic cylinders. Extra-long nose guide, removable port adapters, positive barrel seal and reusable mounts are some of these advantages detailed. Other data covers the many mountings available, dimensions, and related products—valves, manifolds, lubricators, etc.—made by the firm. *Valvair Corp.*

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#### BASIC DATA ON DEEP DRAWN PARTS AND THEIR USES

Basic information on the use of deep drawn parts is presented in this one-page bulletin that tells which metals can be specified for deep drawing, how parts are formed and how they improve products, speed production and cut costs. It illustrates various shapes, showing what products they can be used for, and describes how you can get help in working out problems for which shapes and shells may hold economical answers. *Pressed Steel Tank Co.*

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#### CATALOG MAKES SELECTION OF SHOP, STORAGE, OFFICE EQUIPMENT EASY

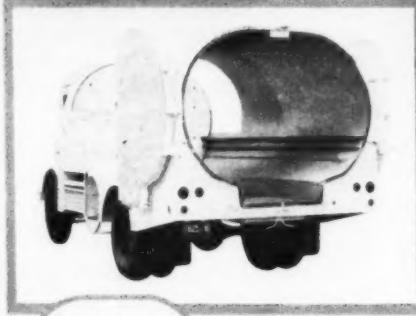
Here's the answer to your problem of selecting shop, office and storage equipment without wasting time or pennies—not to mention dollars. It's a 36-page product catalog that illustrates, describes and prices benches of all kinds, cabinets, desks, tool stands, stools and chairs, laboratory equipment, storage walls, shelvings, racks and bins, clamps, wire mesh partitions, lockers, and many other products to suit your varied and most particular needs. *Green-Penny Co.*

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From the



fabrication shop—



## PACKER BODIES PACKED WITH QUALITY



Pax-It Equipment Co., Inc.  
814 Second Ave. Bldg.  
Seattle 4, Wash.

"Washington Iron Works has done a tremendous job working with our engineers in translating an idea into a top quality piece of equipment . . . and producing it on a production-line basis with consistent quality." So reports Pax-It Equipment Co., manufacturer of a new compactor-type garbage and refuse removal unit to be nationally distributed. Pax-It is one of many widely recognized names in specialty industrial machinery and equipment relying upon quality packed into component parts or complete units manufactured and assembled by Washington Iron Works.

From engineering and design to delivery, we're ready to translate your ideas or specifications into finished products . . . the first of its kind, then in quantity . . . and at the lowest possible cost. Write Washington Iron Works, 1500 Sixth Avenue South, Seattle 4, Washington.



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IRON WORKS**

THOROUGH  
ENGINEERING

IRON & STEEL  
CASTINGS

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MACHINED  
COMPONENTS

COMPLETE  
EQUIPMENT



CAT. NO.  
1751

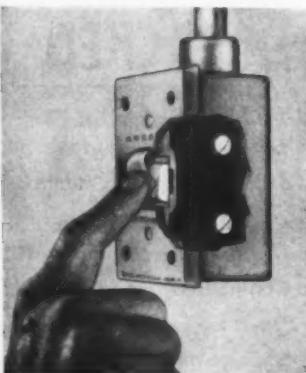
# WEATHERPROOF \*INSULPRENE PLATE and A.C. PressSwitch COMBINATION

Introducing a combination unit—complete in one box—including weatherproof "Insulprene" plate and A.C. "Presswitch" . . . designed for all general outdoor applications: shipping areas, parking lots, gas stations, breezeways, etc. The weatherproof "Insulprene" plate fits both FS and standard wall boxes. The combination is available with 15 or 20 amp. "Presswitch" either single pole, double pole, 3-way or 4-way. "Insulprene" plate resists oil, hot water, live steam, extreme cold, grease, etc.



\*made of DuPont Neoprene

For complete information write



Cut-away shows A.C. "Presswitch" mounted in FS box and protected by new Weather-proof "Insulprene" Plate.

**HARVEY HUBBELL, INCORPORATED**

Bridgeport 2, Connecticut

#### WIRING DEVICE OFFICE AND WAREHOUSE LOCATIONS

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Los Angeles 12, California  
103 North Santa Fe Avenue

San Francisco, California  
1675 Hudson Avenue

IN CANADA:  
Scarborough, Ontario,  
1160 Birchmount Road

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See listing in Directory Section

#### SELECTION GUIDE FOR PRE-BILT SECTIONAL BELT CONVEYORS

Highly practical, this handbook about use and selection of standardized Pre-Bilt sectional belt conveyors makes choosing the right equipment both quick and easy. The 40-page booklet lists 22 components and accessories, furnishes detailed engineering and selection data, and illustrates various installation applications and layouts. The conveyors come in belt widths of 18, 24, 30 and 36 in. *Link-Belt Co.*

. . . FOR YOUR COPY, CIRCLE NO. 184

#### PICTORIAL PUBLICATION FEATURES STEEL, ALUMINUM APPLICATIONS

Action pictures highlighting varied uses of steel and aluminum make up this pictorial publication, sized and printed like a newspaper's roto section. News of steel, aluminum, industrial plastics and metal fabricating machinery products, plus reports of developments in the steel and aluminum industry are featured in its eight pages. You'll find kids, boats, skylights, missiles . . . and misses, too (the shapely type) and many more subjects to make entertaining and informative reading. *Joseph T. Ryerson & Son, Inc.*

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#### 12-PAGER DESCRIBES BRAZING AND HEAT TREATING FACILITIES

In this colorful booklet's dozen pages you can learn all about the capabilities and facilities of a Western firm that specializes in brazing and heat treating. It pictures and describes various types of furnaces, induction heaters, the metallurgical laboratory and other equipment. Tables and charts are included, as well as a listing of 12 processes the company makes available. *Pyromet Company*.

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#### FULL LINE OF KING-SIZE INSTRUMENT CASES DESCRIBED IN BROCHURE

A complete line of "King-Size" instrument cases is pictured, described and tabulated in this new brochure. The deep-drawn aluminum cases come in a diversity of lid sizes, with height choice up to 30 in. Vellums and templates are available to instrument manufacturers to facilitate designing their products to the cases. *TA Mfg. Corp.*

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**DATA, PRICES ON FIBROUS  
GLASS REINFORCED PLASTICS**

This price list-catalog of materials for fibrous glass reinforced plastics gives available sizes, grades and prices for each material along with brief descriptions of properties and recommended applications. It includes complete ranges of fibreglas fabrics and fibers, polyester and epoxy resins and catalysts, parting agents, pigments and other necessary supplies. It's divided into 14 section headings, has 3 pages of property tables and application data. *Cadillac Plastic & Chemical Co.*

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**BULLETIN USES TABLES TO SHOW  
PROPERTIES OF JALCASE 100 STEEL BAR**

Jalcase 100—a free machining, stress stabilized cold finished steel bar—is the subject of this eight-page bulletin that uses a series of tables to show mechanical properties, analysis and machinability rating. The booklet also discusses wear resistance, finish, uniformity of hardness, sizes and heat treatment. Mechanical properties of the other nine grades of Jalcase are also tabulated. *Jones & Laughlin Steel Corp.*

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**DATA SHEET ON HOW TO USE  
WATER RINSEABLE PAINT REMOVER**

This data sheet about a brush-on, water rinseable paint remover explains why you should use it... a single coating can remove up to 10 layers of unwanted paint... and exactly how... a simple procedure. The nonflammable paint stripper remains wet and workable for a day or longer; is safe and noncorrosive on all common metals, clings to vertical as well as horizontal surfaces, and requires no after-neutralization. *Turco Products, Inc.*

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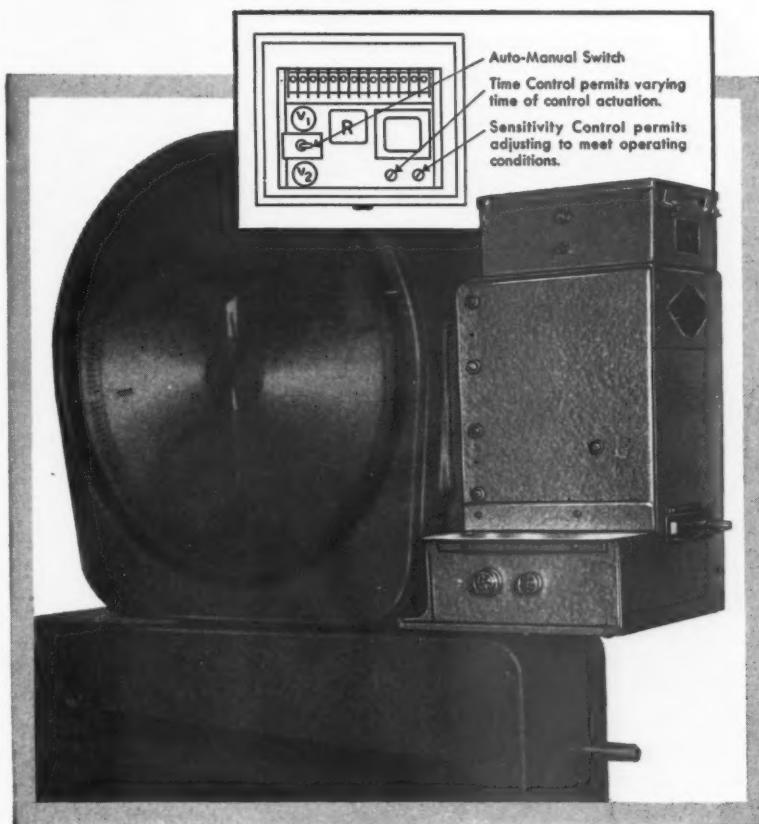
**EIGHT STEPS TO EASY SELECTION  
OF PROPER WELDING-POWER SOURCE**

Eight specific steps to consider when choosing a welding-power source are detailed in this article reprint that is a guide to proper selection of arc welders for use with the stick electrode, gas shielded tungsten-arc or gas-shielded metal-arc welding processes. Schematic drawings add to the article's clarity. *Air Reduction Pacific Co.*

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# NEW Fairbanks-Morse

## Electronic Weight Detector



### Prevents incorrect weighing... stops costly errors!

With the new Electronic Weight Detector, true weight of any load can be automatically obtained and recorded without need of a weighman. Where a weighman is used, it is impossible for him to record incorrect weights or start a sequence at the wrong time. When desired, a flip of the switch can disengage the Weight Detector entirely from the system. *This is the first fully-reliable control of its*

*kind available in the scale industry.*

To completely automate your weighing—to be sure that your weights are correct—to protect yourself by completely policing your entire weighing operation—contact your nearby Fairbanks-Morse Field Engineer, or write directly to Fairbanks, Morse & Co., 600 South Michigan Ave., Chicago 5, Illinois for complete information.

See Sweet's Plant Engineering File for full line of F-M Scales



## FAIRBANKS-MORSE

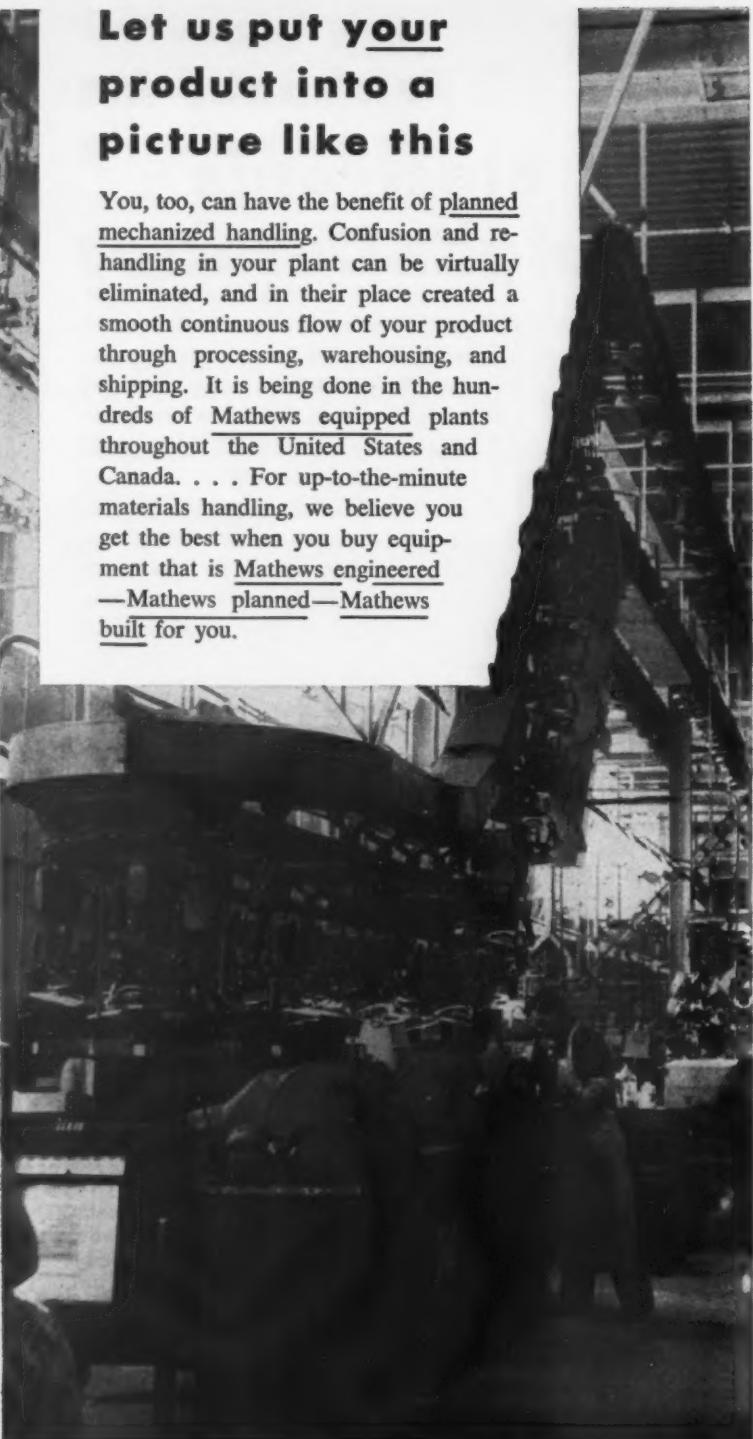
a name worth remembering when you want the BEST

SCALES • PUMPS • DIESEL, DUAL FUEL AND GAS ENGINES • ELECTRIC MOTORS  
GENERATORS • COMPRESSORS • MAGNETOS • HOME WATER SYSTEMS

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See listing in Directory Section

## Let us put your product into a picture like this

You, too, can have the benefit of planned mechanized handling. Confusion and re-handling in your plant can be virtually eliminated, and in their place created a smooth continuous flow of your product through processing, warehousing, and shipping. It is being done in the hundreds of Mathews equipped plants throughout the United States and Canada. . . . For up-to-the-minute materials handling, we believe you get the best when you buy equipment that is Mathews engineered —Mathews planned—Mathews built for you.



### MATHEWS CONVEYER COMPANY WEST COAST SAN CARLOS, CALIFORNIA

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# MATHEWS

*Over Fifty Years of Leadership in Mechanized Handling*

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### SIX-PAGER DEALS WITH GATE, GLOBE AND CHECK VALVES

This six-page circular that folds out to three-page width deals with Bronze and Iron Body gate, globe and check valves for heating, piping and air conditioning systems. It covers valves with pressure ratings from 125 through 300 lb., giving illustrated descriptions to show application, basic design features and standard sizes. It includes conventional screwed and flanged end valves, and threadless valves for soldered or silver brazed connections. *The Fairbanks Co.*

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### RESISTANCE WELDING PERIODICAL CONTAINS SEVEN CASE HISTORIES

Seven case histories make up this 16-page presentation, a recent issue of "Resistance Welding at Work," a house organ. Both high standard aviation and commercial welding are covered and many production advantages pointed out. Histories deal with fabrication of arresting hooks of jet carrier-based aircraft . . . aluminum reinforcement bands on fibreglas storage cases . . . aircraft overhaul and repair, and other interesting studies. *Sciacky Bros., Inc.*

... FOR YOUR COPY, CIRCLE NO. 193

### 24-PAGER DETAILS DESIGN FEATURES FOR STEAM-LINER TRUCKS

Lift truck design and engineering advances incorporated in a new Stream-Liner series are detailed in this 24-pager. A new lowered cowl for better vision; a direct-view instrument panel and a fatigue-cutting treadle type accelerator are among features described in the series that comes in 8 different gasoline, diesel or LP-Gas-powered models, with lifting capacities ranging from 2,000 to 4,000 lb. *Towmotor Corp.*

... FOR YOUR COPY, CIRCLE NO. 194

### STOCK LIST FOR ALUMINUM BRONZE ALLOY PRODUCTS OF ALL KINDS

Stock products made from special aluminum bronze alloys for use in a host of industries are discussed in this illustrated four-page bulletin that lists sizes, physical properties and applications for each. Products included are extruded solid rounds, centrifugally-cast bars, rolled sheet and plate, extruded rectangles, cast die blanks and guide pin bushings. *Ampco Metal, Inc.*

... FOR YOUR COPY, CIRCLE NO. 195

**ALL ABOUT RUBBER BONDED ABRASIVES  
FOR POLISHING AND FINISHING**

Special functions of rubber bonded abrasives for polishing and finishing are highlighted in this six-page folder that deals with rubber polishing wheels, unfinished sticks and stones, special purpose stones, and wheel dressers and sticks. Types of materials on which these products are particularly useful, specifications and prices are clearly and concisely set forth. *The Carborundum Co.*

... FOR YOUR COPY, CIRCLE NO. 196

**CARD GIVES TECHNICAL DATA  
FOR STAINLESS TUBULAR PRODUCTS**

Equally suitable for hanging on the wall or inserting in a folder, this technical data card gives all the facts on Croloy 25-20 stainless tubing and pipe and welding fittings for high temperature applications. Properties—chemical composition, size ranges and short time high temperature tensile and rupture properties—and other needed data are described. *The Babcock & Wilcox Co.*

... FOR YOUR COPY, CIRCLE NO. 197

**HANDBOOK GIVES LATEST DATA  
ABOUT PHOSPHOR BRONZE ALLOYS**

This standard-size handbook made for easy insertion into loose leaf binders is devoted to phosphor bronze alloys, and contains latest data on Flexograin—a fine grain phosphor bronze. It covers wire, bars, rod, strip, sheets, circles and special shapes; gives a resume of the manufacturer's facilities, and uses charts to explain composition, specifications and properties of the various alloys. *Riverside-Alloy Metal Div., H. K. Porter Co., Inc.*

... FOR YOUR COPY, CIRCLE NO. 198

**BULLETIN REVISION ABOUT ROLLER  
CHAIN FLEXIBLE COUPLINGS**

A revised bulletin, this publication on roller chain flexible couplings outlines advantages wanted and needed in such products, including simple, all steel construction for long life and maximum service; accommodation of angular and parallel misalignments with minimum backlash, and easy installation or removal. The booklet also presents selection data and shows installation and maintenance procedures. *Chain Belt Co.*

... FOR YOUR COPY, CIRCLE NO. 199

**How to  
SAVE MONEY  
on  
CONVEYOR CHAIN  
Attachments**

Just a few of the many types of conveyor attachments made by ACME

**SPECIAL CONVEYOR ATTACHMENTS**

Possibilities for modification of Acme Standard Chains and Attachments are practically endless. In all adaptations, Acme engineers are skilled in retaining as many standard parts as possible to reduce cost, or design special attachments for your particular requirements. All Acme conveyor attachments and chains are available in standard, stainless steel or plated.

Write or call your local Industrial Distributors or our engineering department for time and money saving suggestions.

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**Acme Chain Corporation**  
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COMPLETE LINE OF ROLLER CHAINS AND SPROCKETS • DOUBLE PITCH CONVEYOR CHAINS • STAINLESS STEEL CHAINS • CABLE CHAINS • FLEXIBLE COUPLINGS • STANDARD AND SPECIAL ATTACHMENTS  
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See listing in Directory Section

# how the Peer is put in Peerless Electric

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LOS ANGELES 26, CAL. 625 N. Alvarado St. Dunkirk 4-1274	PORLAND 1, ORE. 3607 S.W. Corbett St. Capitol 3-9840	S. FRANCISCO 3, CAL. 1015 Folsom St. Underhill 3-3321	SPOKANE 4, WASH. So. 125 Stevens Madison 4-8058



... for more details, circle No. 39 on Reader Service Postcard  
See listing in Directory Section

## TIPS ON MAINTENANCE OF BRUSHES FOR LOW-VOLTAGE GENERATORS

Practical tips on brush operation and maintenance on high-current, low-voltage generators used in electrolytic processes are provided in this 16-page manual. It discusses metal-graphite brushes used in plating generators, along with explanations of contact drop, friction, resistivity and commutator surfacing. Other sections deal with facing-in of new brushes, dust removal, selective action and factors affecting brush life. *National Carbon Co., Div. of Union Carbide Corp.*

... FOR YOUR COPY, CIRCLE NO. 200

## 38-PAGE BOOKLET DESCRIBES MIGARC CO. WELDING PROCESS

This recently published booklet about Migarc (metal-inert-gas-shielded-arc-process) welding of mild steel and low alloy steels with carbon dioxide CO<sub>2</sub> shielding gas will give you a good working knowledge of both technical and practical aspects of the process. Its 38 pages include data on equipment and power sources, costs, deposition rates, test specimens and many other factors. *Hobart Brothers Co.*

... FOR YOUR COPY, CIRCLE NO. 201

## METAL-WOOD CUTTING BAND SAW IS SUBJECT OF EIGHT-PAGE BULLETIN

A recently introduced 20-in. metal-wood cutting band saw is the subject of this illustrated eight-page bulletin that includes specifications, catalog listings, motors and motor controls for single-phase and three-phase operation. The rugged, modern looking saw features a variable speed drive—50 to 4500 rpm, for cutting everything from stainless steel to aluminum, wood and plastics. *Rockwell Mfg. Co.*

... FOR YOUR COPY, CIRCLE NO. 202

## SELECTION GUIDE HELPS YOU CHOOSE HEAVY DUTY ELECTRIC HOISTS

If you're about to select a heavy duty electric hoist from  $\frac{1}{8}$  ton to 12-ton capacity, you'll find much valuable data in this selection guide that covers such factors as capacity, speed and height of lift, beam dimensions, type of suspension, controls, current supply and operating conditions. Dimensional drawings and detailed specifications for the firm's line of Lo-Hed electric hoists are included. *American Engineering Co.*

... FOR YOUR COPY, CIRCLE NO. 203

**12-PAGE BULLETIN DISCUSSES  
PROPERTIES OF PYROTEX PLASTIC**

Physical properties and application of Pyrotex—an asbestos-reinforced thermosetting phenolic resin plastic—are outlined in this 12-page bulletin. The material, which is laminated and molded, can be machined into precision parts of high performance used to make bushings and bearings, and for hydraulic pistons, friction cones and plates, sealing rings, thrust washers and insulation discs. *Raybestos-Manhattan, Inc.*

. . . FOR YOUR COPY, CIRCLE NO. 204

**PHOTOS AND FACTS CONCERNING  
LINE OF DESCALING EQUIPMENT**

Photos, diagrams, cut-aways and sketches are featured in this 20-page brochure about Rotoblast descaling machines. It covers 4- and 8-wheel machines for descaling sheets, etc.; special machines for descaling rods, bars and wire; marginal descaling, structural equipment for angles, etc., and installations for descaling billets and slabs. *Panghorn Corp.*

. . . FOR YOUR COPY, CIRCLE NO. 205

**BOOKLET GIVES 13 ANSWERS TO NARROW  
OR WIDE WAREHOUSE AISLE QUESTION**

Should the aisles be narrow or wide? is the question posed in this eight-pager that offers 13 ways to solve the wide-or-narrow-aisle warehouse layout problem. The fold-out brochure discusses the problem's history, along with recent changes and some answers provided by new material handling equipment. This firm's equipment in operation is illustrated and additional helpful booklets listed to help you select right type. *Automatic Transportation Co.*

. . . FOR YOUR COPY, CIRCLE NO. 206

**ALL ABOUT HARDCOATING PROCESS  
FOR ALL ALUMINUM ALLOYS**

An article reprint, a data sheet and a four-page bulletin make up this presentation about a process firm engaged exclusively in hardcoating of all aluminum alloys. The bulletin lists 29 features or advantages for the process used . . . such as resistance to abrasion, uniformity, adhesion, tolerances, specifications, etc. The article reprint is actually a case history telling how Sanfordizing has proved itself; the data sheet includes actual samples. *Sanford Process Co., Inc.*

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## *Grip-Master® SPROCKETS*

**LOW INITIAL COST**—Standard bore sizes with keyways and set-screws eliminate machining. Over 400 sprocket sizes available.

**LONGER LIFE**—All steel sprockets up to 7" in diameter have hardened teeth for long life.

**LOWER REPLACEMENT COST**—Save 30%, hubs and bushings are reusable. Easy maintenance reduces production down time.

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ROLLER CHAIN DRIVES SINCE 1893

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See listing in Directory Section



*America's Most  
Complete Line of  
Shaft Mounted  
Speed Reducers*

**55  
MODELS**

- Capacities up to 170 hp
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- Single Reduction
- Double Reduction
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# Torque-Arm

**THE DODGE DEVELOPMENT  
THAT CHANGED THE  
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SPEED REDUCTION**

In fewer than ten years, the range of Torque-Arm Shaft Mounted Speed Reducers has increased from 6 to 55 models, to meet the ever increasing demand for this improved method of speed reduction.

By eliminating foundation, sliding base and flexible coupling this modern speed reducer has saved untold installation time and untold dollars of cost.

The rugged semisteel housing developed by Dodge has never been improved upon. It is corrosion resistant—and it has the strength to hold bearing seats in line for the life of the unit.

Dodge design provides wide spacing for the bearings. Loads are carried easily, contributing to Torque-Arm's long life and very high efficiency. The gears are finest quality—helical, heat treated steel.

Torque-Arm mounts vertically or horizontally in any position around the driven shaft. It locks to the shaft on *both* sides of the housing. The holes in the output hub provide simple removal with puller. Overload release and built-in backstop are optional.

Dodge Torque-Arm is America's most widely used shaft mounted speed reducer. It is stocked by your local Dodge Distributor. Ask him. Or write us for bulletin.

**DODGE MANUFACTURING CORPORATION, 6600 Union, Mishawaka, Ind.**

**DODGE**  
of Mishawaka, Ind.

... for more details, circle No. 41 on Reader Service Postcard  
See listing in Directory Section  
**WESTERN INDUSTRY/SEPTEMBER 1959**

**Western**

# INDUSTRIAL POWER EQUIPMENT

## Buyers' Directory

a special service feature for the West's plant operating executives

### HOW TO USE THIS DIRECTORY

For any product to be purchased or serviced, or about which further details are needed, refer to correct manufacturer's listing in "Where to buy in the West" section to obtain name, address and phone number of nearest sales and engineering office.

If you want more information about a certain type of power equipment for your plant, but names of manufacturers are unknown, refer to correct heading in "Classified Products" section for names of all manufacturers of that item who have sales offices in the West.

Manufacturers of industrial power equipment who are not listed in this directory probably do not have Western branch offices or distributors. If you want more information about manufacturers not listed, write: Editor, WESTERN INDUSTRY, 609 Mission St., San Francisco 5, Calif.

**ACCESSORY PRODUCTS CO.,** a Div. of **TEXTRON, INC.**, 616 W. Whittier Blvd., Whittier, Calif.  
Controls (compressed air), Fittings and Couplings (air), Regulators (pressure).

*Branch Office*  
Colo., Inglewood — 4651 So. Washington St. 1-7601

**ACME CHAIN CORP.**, 812 Main St., Holyoke, Mass.

*Roller chains, Sprockets*

*Representatives*  
Ariz., Scottsdale—Yancey Sales, Inc., 64 W. Second St.  
Calif., Berkeley—Berkeley Industrial Supply Co., 1003 Pardee.

Calif., Calexico—Baleros del Valle, S.A. de R.L., P. O. Box 672.

Calif., El Centro—W. H. Douthitt Steel & Supply Co., P. O. Box 548.

Calif., Fresno—Central Supply Co., 424 M St.

Calif., Lancaster—Page Bearing Co., 45331 No. Sierra Hwy.

Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 So. Central Ave. AD 3-7221

Calif., Los Angeles—Western Belting & Mechanicals, Inc., 3525 Emery St.

Calif., San Diego—Standard Iron Supply, P. O. Box 9.

*See advertisement on page 63*

Ida., Boise — Yanke Machine Shop & Sprocket Co., Inc., 1114 Front St.  
Ida., Pocatello — Flaherty Sales, Inc., P. O. Box 1387.

Nev., Las Vegas—Reliable Bearing & Supply Co., 2700 Highland Dr.

Ore., Astoria—Fisher Bros. Co., P. O. Box 360.

Ore., Medford—Cal-Ore Machinery Co., Inc., P. O. Box 232

Ore., Portland — J. W. Minder Chain &

Gear Co., 307 S. E. Hawthorne Blvd.  
BE 6-1131  
Ore., Salem — J. W. Minder Chain & Gear Co., 1515 13th St. S. E. JU 1-2437  
Wash., Longview — Longview Equipment Co., 1005 15th Ave.

**ACRO DIV., ROBERT SHAW-FULTON CONTROLS CO.**, 2040 E. Main St., Columbus, Ohio

Precision Snap-Action switches, Electrical relays, Timers.

*Branch Offices*  
Calif., Los Angeles — Fred Alleman, 1625 Blake Ave. CA 2-8128  
Calif., San Francisco — Fisher Switches, Inc., 40 Gough St.  
Colo., Denver — C. P. Elliott, 661 Delaware St.

**ADAM, FRANK ELECTRIC CO.**, 3650 Windsor Pl., St. Louis 13, Mo.

Distribution, panelboards, Distribution switchboards, Busduct, Enclosed safety switches.

*Branch Offices*  
Calif., San Francisco—947 Folsom St. EX 7-2087

Colo., Denver—2046 Arapahoe St. TA 5-3991

N. Mex., Carlsbad—1011 Richards St. TU 7-2303

Ore., Portland—5202 N.E. 73rd AT 1-2613

Wash., Seattle—568 First Ave. S. MU 2-6934

**ADEL PRECISION PRODUCTS**, a div. of **GENERAL METALS CORP.**, 1444 Washington Ave., Huntington 4, W. Va.

Controls (hydraulic), Motors (hydraulic), Pumps (hydraulic power), valves (hydraulic power line).

*Branch Office*  
Calif., Burbank—1777 Van Owen St. TR 7-2611

*Representatives*  
Ariz., Phoenix—Air-Draulics Co., 3135 N.

**NOTE:** This directory appears only as a special section of the September 1959 WESTERN INDUSTRY, and is not available bound separately. Contents are copyrighted and reproduction of any portion of this directory is not permitted by publisher, King Publications.

### WHERE TO BUY IN THE WEST p. 67-95

Lists plant power equipment manufacturers in the entire U. S. who have Western sales offices, distributors or representatives (on pages with strip along upper edges). Complete buying information is shown with each manufacturer's listing as follows:

Home office address

Products manufactured

Manufacturer's branch offices in the West, their addresses and telephone numbers

Distributors and representatives in the West, their addresses and telephone numbers.

### CLASSIFIED PRODUCTS p. 95-98

Contains names of manufacturers cross-referenced under categories of industrial power products (see pages with strip along lower edge).

29th Ave. AL 8-6441  
Calif., So. Pasadena — Teglen Engr. Co., Inc., 1942 Huntington Dr. MU 1-2856  
Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1253  
Ore., Portland — Ray Bobbs Air-Draulics, 218 S.E. 12th Ave. BE 2-6133

**AEROQUIP CORP., WESTERN DIV.**, 3015 Winona Ave., Burbank, Calif.

Flexible hose lines with detachable, reusable fittings for all fluids, Self-sealing couplings.

*Warehouse*  
Ore., Portland—635 N.W. 16th Ave. CA 6-6201

**AIRATERRA**, 620 Paula Ave., Glendale 1, Calif. CI 6-1761, CH 5-8521

Fueling nozzles, open and self-sealing couplings, cups, nipples and chain assemblies.

**AIRMATIC VALVE, INC.**, 7313 Associate Ave., Cleveland 9, Ohio

Cylinders (air, hydraulic), Valves (air, hydraulic), Regulators.

*Representatives*  
Calif., Arcata—Munnell & Sherrill, Inc., 156 So. G St. VA 2-1761  
Calif., Oakland—Otrich Co., Grand Ave. at Weldon TE 2-3781  
Calif., San Diego—General Industrial Supply Co., 1118 F St. BE 4-6767

Calif., Ukiah—Munnell & Sherrill, Inc., Rt. 1, Box 559-H, No. Hwy. 101. HO 2-3490, -7222

Ore., Eugene—Munnell & Sherrill, Inc., 1620 W. Seventh Ave. DI 5-8792

Ore., Portland—Munnell & Sherrill, Inc., 1163 N.E. 63rd St. AT 1-0021

Ore., Roseburg—Munnell & Sherrill, Inc., 1958 So. Stephens. OR 3-3508

Wash., Seattle—Standard Equipment Sales, 204 W. Lucile St. PA 5-9440

Wash., Seattle—Western Dynamics, Inc., 220 Westlake Rd. No. MU 2-2171

## ALKON—AMPLEX

**ALKON PRODUCTS CORP.**, 200 Central Ave., Hawthorne, N. J.

Pneumatic and hydraulic cylinders, Valves and Drill units.

*Representatives*

Ariz., Phoenix—Air Automation Machine, 3643 W. Colter YE 7-6195  
Calif., No. Hollywood—Numatic Engineering, 11224 Burbank, ST 7-0114  
Ore., Portland—Hydraulic & Air Equipment, 2316 N. W. Savier, CA 2-3295  
Wash., Seattle—Hydraulic & Air Equipment, 2450 Sixth Ave. So. MU 2-1681

**ALLEN-BRADLEY CO.**, 136 W. Greenfield Ave., Milwaukee 4, Wis.

Automatic switches, Control centers, Electric control equipment, Electric motor controls, Electric switches.

See advertisement on page 8

*Branch*

Calif., Los Angeles—1264 So. Boyle Ave. AN 9-9421

*Representatives*

Ariz., Phoenix—Edward P. Weller & Co., 1902 E. Rovey Ave. AM 6-3188  
Calif., San Diego—James A. Setchell, 301 W. G St. BE 3-3981  
Calif., San Francisco—Campbell & George Co., 1601 Cortland Ave. MI 8-1236  
Colo., Denver—Young Electric & Mfg. Co., 2134 Curtis St. AC 2-4841  
N. Mex., Albuquerque—A & A Supply Co., 114 Morningside Dr. N.E. AL 6-0307  
Ore., Portland—J. A. Tudor & Associates, Inc., 1004 S.E. Belmont St. BE 2-1188  
Utah, Salt Lake City—Stevens Sales Co., 1482 Major St. IN 7-5489  
Wash., Seattle—J. A. Tudor & Associates, Inc., 2605 Western Ave. MU 2-7444

**ALLIS-CHALMERS MFG. CO.**, Milwaukee 1, Wis.

Air compressors (stationary), Bases (motor), Circuit breakers, Control centers, Controls (electric, electric motor), Engines, Gearmotors, Generators (electric), Motors (electric, DC; electric, polyphase, AC), Rectifiers, Substations (unit), Switchgear equipment, Transformers, Transmission, variable speed.

*Branch Offices*

Ariz., Phoenix—3300 No. Central Ave.  
Calif., Los Angeles—417 So. Hill St.  
Calif., San Diego—747 Ninth Ave.  
Calif., San Francisco—650 Harrison St.  
Colo., Denver—655 Broadway Bldg.  
Mont., Butte—81 Hibourt Bldg.  
N. Mex., Albuquerque—5104 Grand Ave. NE.  
Ore., Portland—520 S.W. 6th Ave.  
Utah, Salt Lake City—136 So. Main St.  
Wash., Seattle—1318 4th Ave.  
Wash., Spokane—West 12 Indiana Ave.

**ALLIS, LOUIS**, see LOUIS ALLIS CO.

**ALUMINUM CO. OF AMERICA**, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

*Branch Offices*

Calif., Los Angeles—1145 Wilshire Blvd. MA 6-0241  
Calif., San Diego—2962 Fifth Ave. CY 8-9326  
Calif., San Francisco—2500 Equitable Life Bldg. YU 6-6434  
Colo., Denver—105 Filmore St. DU 8-1619  
Ore., Portland—1115 U. S. National Bank Bldg. CA 2-9861  
Wash., Seattle—1411 Fourth Ave. Bldg. MA 4-4040  
Wash., Spokane—610 Fidelity Bldg. RI 7-6124

*Electrical Distributors*

Ariz., Phoenix—Graybar Electric Co., Inc., 1700 N. 22nd Ave.  
Calif., Fresno—Graybar Electric Co., Inc., 101 Van Ness Ave.  
Calif., Long Beach—Parks & Co., 524 W. 17th St.  
Calif., Los Angeles—California Wholesale Electric Co., P.O. Box 3581, Term. Annex.  
Calif., Los Angeles—Graybar Electric Co., Inc., P.O. Box 2769, Term. Annex.  
Calif., Oakland—Graybar Electric Co., Inc., 1911 Union St.  
Calif., Sacramento—Graybar Electric Co., 1900—14th St.  
Calif., San Francisco—Graybar Electric Co., Inc., 1750 Alameda St. MA 1-5131  
Calif., San Jose—Graybar Electric Co., Inc., 1376 No. 10th St.  
Colo., Denver—Graybar Electric Co., Inc., 104 Wazee Market  
Ida., Boise—Graybar Electric Co., Inc., 1325

**Idaho St.**  
Nev., Reno—Kitchen Electric Supply Co., P.O. Box 1831.

N. Mex., Albuquerque—General Electric Supply Co., 820 First St. N. W.  
Ore., Eugene—Graybar Electric Co., Inc., 2580 W. Broadway.

Ore., Portland—Graybar Electric Co., P.O. Box 4169.

Ore., Portland—Graybar Electric Co., Inc., Park & Flanders Sts.

Utah, Salt Lake City—General Electric Supply Co., 312 W. Second So. St.  
Utah, Salt Lake City—Pole Line Distributing Co., P.O. Box 2405

Wash., Seattle—Graybar Electric Co., Inc., P.O. Box 3127.

Wash., Spokane—Graybar Electric Co., Inc., 1033 W. Gardner Ave.

Wash., Spokane—Tinling & Powell, E. 706 Sprague Ave.

Wash., Wenatchee—Wells & Wade, Inc., 201 So. Wenatchee Ave.

*Metal Distributors*

Ariz., Phoenix—Ducommun Metals & Supply Co., 301 So. 26th St. BR 5-4471

Calif., Berkeley—Ducommun Metals & Supply Co., 2550 Seventh St. TH 1-1820  
Calif., Los Angeles—Ducommun Metals & Supply Co., 4890 So. Alameda St. LU 8-0161

Calif., Los Angeles—Pacific Metals Co., Ltd., 2187 So. Garfield Ave. RA 3-5431

Calif., San Diego—Ducommun Metals & Supply Co., 1390 Wilson St. GR 7-3141

Calif., San Francisco—Pacific Metals Co., Ltd., 1900 Third St. UN 3-5600

Colo., Denver—Marsh Steel & Aluminum Co., 5500 Colorado Blvd. KE 4-1241

Colo., Denver—Metal Goods Corp., 4343 Holly St. DU 8-4141

Ida., Boise—Pacific Metal Co., 325 Grove St. Phone 3-6468

Ore., Portland—Pacific Metal Co., 303 N.W. Park Ave. CA 7-0693

Utah, Salt Lake City—Pacific Metals Co., Ltd., 261 W. Fifth So. DA 2-3561

Wash., Seattle—Ducommun Metals & Supply Co., 120 Dawson St. PA 5-1500

Wash., Seattle—Pacific Metal Co., 4150 First Ave. So. MA 2-6925

*Cable Distributors*

Ariz., Phoenix—Randolph Engineering Corp., 1029 No. First St. AL 8-5281

Calif., Los Angeles—Rome Cable Corp., 2510 So. Malt Ave. RA 3-3631

Calif., San Francisco—Rome Cable Corp., 1100 Selby St. VA 6-3580

Colo., Denver—E. T. Vionier, Inc., 1160 Elati St. KE 4-0533

Utah, Salt Lake City—Rome Cable Corp., 230 So. Fourth W. St. EL 9-8811

Wash., Seattle—Rome Cable Corp., 3430 Fourth Ave. So. MA 4-3017

**AMERICAN BRAKE SHOE CO.**, 530 Fifth Ave., New York 36, N.Y.

Hydraulic presses, Valves, Controls, Automatic and semi-automatic welders.

*Branch Offices*

Calif., Hawthorne—565 N. Prairie Ave.

Calif., Los Angeles—5805 Downey Rd. LU 5-1159

Calif., San Francisco—1010 Russ Bldg. DO 2-6436

**AMERICAN BRAKE SHOE CO.**, see DENISON ENGINEERING DIV.

**AMERICAN BRASS CO.**, see ANACONDA METAL HOSE DIV.

**AMERICAN ELECTRONICS, INC.**, 75 Front St., Brooklyn, N.Y.

Sequential automatic data recording annunciators, Printers and time and event recorders, Data processing devices and systems.

*Branch Office*

Calif., Los Angeles—1025 W. Seventh St.

**AMERICAN MACHINE & FOUNDRY CO.**, see LELAND ELECTRIC CO., DIV.

**AMERICAN MACHINE & METALS INC.**, see UNITED STATES GAUGE DIV.

**AMERICAN MANGANESE STEEL DIV., AMERICAN BRAKE SHOE CO.**, 389 E. 14th St., Chicago Hts., Ill. Hardfacing welding rod, Manganese steel castings, Ash handling pumps.

*Branch Offices*

Calif., Los Angeles—5805 Downey Rd. LU 3-4831

Calif., Oakland—850 Ferry St. HI 4-1703

Colo., Denver—Fourth & Wazee Sts. AC 2-1723

*Representatives*

Ariz., Phoenix—Norman Molyneaux, 306 E. Lamar Rd. AM 6-3608

Calif., Oakland—Alloy Hardfacing Co., 405 49th St.

Calif., Santa Ana—Apex Equip. Co., Inc., 3017 So. Holliday St.

Colo., Denver—Denver Oxygen Co., 1160 Tenth St.

Idaho, Idaho Falls—Sheehan's Welding Supply, 251 A St.

Mont., Butte—Construction Materials Co., 803 So. Arizona, S.E.

Nev., Fallon—Bernie Spencer's Industrial Sales & Service, P.O. Box 445.

Ore., Portland—Oregon Tractor & Equipment Co., 7606 N. E. Union Ave. BU 5-2596

Wash., Aberdeen—L. G. Isaacson Co., 901 E. Wishkah.

**AMERICAN PULLEY CO.**, 4200 Wissahickon Ave., Philadelphia 29, Pa.

Bases (motor), Belting, drive (rubber), Collars (shaft), Pulleys (conveyor, flat belt), Reducers, speed (shaft mounted), Sheaves (adjustable diameter), Transmission, variable speed.

*Branch Offices*

Calif., Los Angeles—1238 So. Atlantic Blvd. AN 8-6061

Calif., Oakland—800 51st Ave. AN 1-9681, -82

Wash., Seattle—911 Western Ave. MU 0117

*Representatives*

(Represented by distributors in principal cities)

**AMERICAN STOCK GEAR DIV., PERFECTION GEAR CO.**, 152nd St. & Vicennes, Harvey, Ill.

Gears (bevel, helical, spur, etc.), Gears (worm), Reducers, speed (worm gear), Sprockets, Gear-motors, Universal joints, Flexible couplings, Rat-hets, Gear rack, Pinion wire.

*Representatives*

Calif., Los Angeles—American Chain & Gear Co., 2451 E. 57th LU 1-7215

Calif., Los Angeles—Marwood, Ltd., 320 E. 3rd MU 3241

Calif., San Francisco—Marwood, Ltd., 357 9th St. HE 1-7893

Ore., Portland—Marwood, Ltd., 209 S.W. 1st Ave. CA 3-5123

Wash., Seattle—Marwood, Ltd., 1714 1st St. EL 4747

**AMES IRON WORKS, INC.**, 25 E. Second St., Oswego, N.Y.

Amestream generators (packaged boiler units furnishing steam or hot water at various pressures and horsepower).

*Representatives*

Calif., Los Angeles—Horrell Co., 8240 Beverly Blvd. WE 3-9151

Calif., San Francisco—Atkins, Kroll & Co., 417 Montgomery St. SU 1-0318

Calif., San Francisco—H. J. Wickert & Co., Inc., 770 Folsom St. YU 6-2354

Colo., Denver—Hendrie & Bolhoff Co., 1635—17th St. KE 4111

Colo., Denver—G. M. Wallace & Co., 324 Denham Bldg. AM 6-0386

Mont., Butte—G. M. Wallace & Co., P. O. Box 208, Phone 2-8391

Ore., Portland—Bumstead-Woolford Co., 320 S. W. Stark St. CA 8-6686

Utah, Salt Lake City—G. M. Wallace & Co., 200 S. Main St. EM 4-5611

Wash., Seattle—Bumstead-Woolford Co., 1411 Fourth Ave. EL 4915

**AMPCO METAL, INC.**, 1756 So. 38th St., Milwaukee 46, Wis.

Copper-base alloys to resist hard wear and corrosion.

*West Coast Plant*

Calif., Burbank—30 E. Burbank Blvd. TH 8-5504, VI 9-2391

*Representatives*

Colo., Longmont—Slack-Hornor Brass Mfg. Co., P. O. Box 838 (Licensee Foundry)

Wash., Seattle—Alaskan Copper & Brass Co., 3223 Sixth Ave. So. (stock products).

**AMPLEX DIV., CHRYSLER CORP.**, P.O. Box 2718, Detroit 31, Mich.

Oilite powder metal products, Self-lubricating bearings, (sleeve, flange thrust), Cages, Bars, Discs, Strips, Precision parts, Permanent filters.

*Representatives*

Calif., Los Angeles—Kingwell Bros., Ltd.,

## ANACONDA—BARRY

4600 Pacific Blvd. LU 2-7427  
Calif., San Francisco—Kingwell Bros., Ltd.  
457 Minna St. SU 1-0514

**ANACONDA METAL HOSE DIV.,  
AMERICAN BRASS CO.**, 698 So.  
Main St., Waterbury 20, Conn.

Flexible metal hose, tubing, and connectors of  
Teflon, Conduit, Vibration eliminators

**Branch Offices**  
Calif., Paramount—14900 Garfield Ave.  
NE 6-0321  
Calif., San Francisco—120 Montgomery  
St. YU 6-0051

**Distributors**

Calif., San Francisco—Milligan-Spika Co.,  
1485 Bayshore Blvd.  
Ore., Portland—Peterson Industrial Products,  
Inc., 416 N. W. Tenth Ave.  
Wash., Everett—Washington Belting &  
Rubber Supply, 2923 Grand Ave.  
Wash., Tacoma—Washington Belting &  
Rubber Supply, 672 E. 11th St.

**ANACONDA WIRE & CABLE CO.**, 25  
Broadway, New York 4, N. Y.  
Wire and cable (electric).

See advertisements on pages 18 & 19

**Branch Offices**  
Calif., Los Angeles—807 Douglas Oil Bldg.  
MA 6-2371  
Calif., San Francisco—120 Montgomery St.  
YU 6-0051, -52, -53  
Colo., Denver—909 Seventeenth St. AC 2-  
0616  
Wash., Seattle—954 Stuart Bldg. MA 3-4686,  
-7, -8

**APPLETON ELECTRIC CO.**, 1701  
Wellington Ave., Chicago 13, Ill.  
Circuit breakers, Electric conduits and fittings.

**Branch Offices**  
Calif., Los Angeles—6450 E. Bandini Blvd.  
PA 8-0274, -75  
Calif., San Diego—301 W. "G" St. BE 4-1222  
Calif., San Francisco—1485 Bayshore Blvd.  
JU 7-5201  
Colo., Denver—FR 7-8865  
Ore., Portland—CA 3-7500  
Wash., Seattle—1033 6th Ave. MA 2-5740

**Representatives**  
Calif., Los Angeles—American Wholesale  
Electric, 130 So. Hewitt  
Calif., San Francisco—California Electric  
Supply Co., 1585 Folsom.  
Colo., Denver—Central Electric Supply Co.,  
500 Upper Quivira St.  
Ore., Portland—Chown Electric Supply Co.,  
112 S.W. Second Ave.  
Wash., Seattle—North Coast Electric, 171  
Jackson St.

**ARMSTRONG MACHINE WORKS,**  
816 Maple St., Three Rivers, Mich.  
Steam traps.

**Representatives**  
Ariz., Phoenix—John W. Ladlow, P.O. Box  
1784. BR 6-2371  
Calif., Los Angeles—Guy L. Warden &  
Sons, 209 W. 12th St. RI 7-0541  
Calif., San Francisco—Refrigerating &  
Power Specialties Co., 380 Brannan St.  
EX 2-4000  
Colo., Denver—Hendrie & Bolhoff Manufacturing Co., 1635 17th St. KE 4111  
Ore., Portland—1814 S.E. 7th Ave. BE 4-9774  
Utah, Salt Lake City—Face-Turpin Co., 726  
So. Third W. St. DA 2-5595  
Wash., Seattle—Arthur Forsyth Co., 2800  
15th Ave. AT 3-5716  
Wash., Spokane—Arthur Forsyth Co., N. 120  
Division St. MA 4-2933

**ARROW-HART & HEGEMAN ELEC.  
CO., THE**, 103 Hawthorn St., Hartford 6, Conn.

**Branch Offices**  
Calif., Los Angeles, 120 So. Anderson St.  
AN 9-8166  
Calif., San Francisco—277 Pennsylvania  
Ave. MA 1-2112  
Colo., Denver—1160 Elati St. KE 4-6724  
Wash., Seattle—1732 4th Ave. So. MA  
4-8270

**ASCO SINTERING CORP.**, 7799 Telegraph Rd., Los Angeles 22, Calif.  
Bearings (sleeves).

See advertisement on page 108

**Representatives**

Calif., Los Angeles—J. F. Brown, 2547  
Conata St. RA 3-5121  
Calif., Los Angeles—G. Strever, P. O. Box  
325. RA 3-5121  
Calif., Los Angeles—L. Swenning, 12671  
Lewis St. RA 3-5121  
Calif., San Diego—Wm. Wilkinson, P. O.  
Box 3445. CY 8-2717

**ASSOCIATED GEAR & MACHINE  
CO.**, 829 Santa Fe Ave., Los Angeles  
21, Calif.

Gears, Chain, Sprockets, Couplings, Speed re-  
ducers.

**ATKOMATIC VALVE CO., INC.**, 545  
W. Abbott St., Indianapolis 25, Ind.  
Valves (air power line, hydraulic power line).

**Representatives**

Calif., Los Angeles—Brenner-Fiedler & As-  
sociates, 661 No. Spaulding Ave. WE 3-  
8811  
Calif., San Francisco—Claude B. Smith Co.,  
200 Davis St. GA 1-7391  
Colo., Englewood—Rocket Components Co.,  
2950 So. Fox St. SU 9-2548  
Wash., Seattle—Fred G. Greaves Co., 418  
Eighth Ave. No. MA 3-0680

**ATLAS CHAIN & MFG. CO., P. O.  
Box 708, West Pittston, Pa.**

Couplings, Roller chain, Sprockets.

See advertisement on page 121

**Representatives**

Calif., Los Angeles (Maywood)—R. & J.  
Dick Co., 5276 Atlantic Blvd. LU 3-4014  
Calif., San Francisco—R. & J. Dick Co., 510  
Bryant St. SU 1-1341  
Ore., Portland—R. & J. Dick Co., 716 N.E.  
Third Ave.  
Wash., Seattle—R. & J. Dick Co., 307 Mar-  
itime Bldg. MU 2-1922

**ATLAS COPCO PACIFIC, INC.**, 930  
Brittan Ave., San Carlos, Calif.

Compressors, Pumps, Rock drills, Tools (air),  
Hose (air).

**Branch Offices**

Ariz., Phoenix—2326 N. 22nd Ave. AL 2-2022  
Colo., Denver—2360 So. Delaware PE 3-2926  
Utah, Salt Lake City—1065 So. Second W.  
EM 4-2318  
Wash., Spokane—1509 W. Second St. TE 8-  
1531

**AUTOMATIC MOTOR BASE CO.**,  
Windsor, N. J.

Automatic motor bases for control of belt tension.

**Representative**

Calif., Los Angeles—Imperial Conveyor  
& Engineering Co., 816 So. Santa Fe Ave.  
MA 2-8197

**AUTOMATIC STEEL PRODUCTS, see  
MERCURY CLUTCH DIV.**

**AUTOMATIC SWITCH CO.**, Florham Park, N. J.

Controls (electric, hydraulic), Switches (automatic,  
electric), Valves (air power line, hydraulic power  
line, solenoid).

**Branch Offices**

Calif., Los Angeles—1233 Goodrich Blvd.  
RA 3-3669

**Representatives**

Ariz., Phoenix—Steel & Eng. Products Co.,  
411 No. Central Ave. AL 3-5311  
Calif., Huntington Park—Valvate Associa-  
tes, 7814 State St. LU 3-1263  
Calif., Los Angeles—Electric Corp. of Cali-  
fornia, 200 So. Mission Rd. AN 9-0111  
Calif., San Diego—Industries Supply Co.,  
Fourth Ave. & J St. BE 9-0371  
Calif., San Diego—Orbit Supply Co., 5015  
Weeks Ave.

Calif., San Francisco—Paul S. Everly Co.,  
550 Ninth St. HE 1-2295

Calif., San Francisco—Leighton-Stone  
Corp., 770 Folsom St. YU 6-5731

Calif., San Francisco—Terco Equipment  
Co., 939 Howard St. GA 1-1736

Colo., Denver—Clyde P. Elliott, 661 Dela-  
ware St. AL 5-7988

Colo., Denver—Hendrie & Bolhoff Co.,  
1635 17th St. KE 4-4111

N. Mex., Albuquerque—Ralph B. Black, 721  
Loma Vista Dr. N.E. Phone 5-9625

N. Mex., Albuquerque—Steel & Engineer-  
ing Products Co., 5900 Domingo Rd. N.E.

AL 6-9612  
Ore., Portland—Harris Supply Co., 524 N.W.  
14th Ave. CA 8-4181

Ore., Portland—Western Machinery Co.,  
1035 S.E. Ninth Ave. BE 6-4117

Utah, Salt Lake City—Control Equipment  
Co., 323 W. 14th So. HU 7-7741

Utah, Salt Lake City—Waterworks Equip.  
Co., 502 West Third So. DA 8-5311

Wash., Seattle—Power & Controls, Inc., 5505

17th Ave. N.W. HE 3819

Wash., Seattle—Standard Electric Sales, 204

W. Lucile St. PA 5-9440

Wash., Seattle—Steam Supply & Rubber  
Co., 123 Jackson St. MA 6556

**BABBITT STEAM SPECIALTY CO.**,

Babbitt Square, New Bedford, Mass.

Babbitt adjustable sprocket rims for control of  
overhead valves.

**BAILEY METER CO.**, 1050 Ivanhoe

Rd., Cleveland 10, Ohio

Measurement and/or control of combustion,  
conductivity, draft, flow, liquid level, pressure, pH,  
smoke density, temperature and vacuum.

**Branch Offices**

Calif., Los Angeles—818 S. Atlantic Blvd.  
CU 3-1187

Calif., San Francisco—55 New Montgomery  
St. SU 1-0926

Colo., Denver—1506 Kearney St. EA 2-7745

Utah, Salt Lake City—2664 Capricorn Way  
CR 7-5251

Wash., Seattle—200 Broadway. MA 4-7094

**BARBER-COLMAN CO.**, 1700 Rock

St., Rockford, Ill.

Controls (electric), Control centers.

**Branch Offices**

Calif., Pasadena—190 E. Glenarm St. RY  
1-2811

Calif., San Diego—2311 Kettner Blvd. BE  
2-1272

Ore., Portland—1210 S.E. Seventh Ave.  
BE 4-9254

**Representatives**

Ariz., Phoenix—E. B. Bomar Sales, Inc.,  
914 W. Madison St. AL 4-2726

Calif., Bakersfield—Jay Perrin Co., 1515  
E. 19th St. FA 3-8531

Calif., Fresno—G. J. Yamas Co., 1621 E.  
Belmont. AD 3-5307

Calif., Sacramento—G. J. Yamas Co., 3730  
Broadway. GL 2-5204

Calif., San Francisco—G. J. Yamas Co.,  
667 Howard Blvd.

Colo., Denver—Automatic Control &  
Equipment Co., 3750 Pecos St. GE 3-6436

Colo., Denver—Denver Fire Clay Co., 3033  
Blake St. MA 3-7177

Nev., Las Vegas—Sun Supply Co., 708 So.  
Main St. DU 2-3756

N. Mex., Albuquerque—Control & Equip-  
ment Co., 5106 Second St. N.W. AL 5-1631

Ore., Portland—Grant Edel Co., 8714 N.E.  
Siskiyou St. AL 4-6524

Utah, Salt Lake City—Paul E. Benton Co.,  
220 W. Third So. EL 9-5194

Utah, Salt Lake City—Denver Fire Clay  
Co., 374 No. Fourth W. St. DA 2-1295

Wash., Seattle—M. N. Musgrave Co., 2019  
Third Ave. MA 3-4425

Wash., Spokane—M. N. Musgrave Co., 215  
Hutton Bldg. TE 8-1481

**BARKSDALE VALVES**, 5125 Alcoa

Ave., Los Angeles 58, Calif. LU

9-6181

Controls (compressed air, hydraulic), Valves (air  
power lines, hydraulic power line).

**Branch Office**

Calif., San Francisco—Rm. 209, Exec. Acft.  
Term., S.F. Int. Airport. JU 3-0162

**Representatives**

Ariz., Phoenix—Come & Wallace Co., 1325  
So. 26th St. BR 5-4496

Calif., San Diego—Baily Equipment Co.,  
Inc., 3856 California St. CY 5-5141

Colo., Denver—Industrial Materials, 2855

Walnut St. AC 2-0891

Hawaii, Honolulu—Berkley Eng. Equip.  
Co., Hawaiian Airlines Adm. Bldg., Hon-  
olulu Airport. Phone 88-9035.

Ore., Portland—Spencer Aircraft Ind., 6400

N. E. Simpson. AT 8-3417

Ore., Portland—Tower Equipment Co., 16822

S.E. River Rd. OL 4-1745

Wash., Mercer Island—Tower Equipment  
Co., 5053 88th S.E. AD 2-1460

Wash., Seattle—Spencer Aircraft Ind., 8410

Dallas Ave. PA 3-0911

Wash., Spokane—Interstate Sales Co., P.O.

Box 198. FA 7-9528

**BARRY CONTROLS, INC.**, 700 Pleasant

St., Watertown 72, Mass.

Machinery mounts, Vibration mounts.

## BEARING SALES—BROS. INC.

*Branch Office*  
Calif., Burbank—2821 Naomi St. VI 9-2256

*Representatives*

Ariz., Phoenix—Western Specialty Co., P.O. Box 6575  
Calif., Burbank—Die Supply Div., E. W. Bliss, 816 No. Hollywood Way. VI 9-5551  
Calif., San Jose—Die Supply Div., E. W. Bliss, 7th & Commercial. CY 7-4114  
Colo., Denver—Geoffrey-Lane Inc., 432 E. 1st Ave. SH 4-2451  
New Mex., Albuquerque—Equipment Sales & Mfg., 1018 4th St. N.W.

**BEARING SALES CO.**, 1950 So. Olive St., Los Angeles 7, Calif.

**Bearings** (babbitt, ball, roller, sleeve), Drive belting (chain, link). Drive belting (composition, leather, rubber), Belts (timing), V Belts (composition, leather, rubber), Chains for drives (detachable link, roller, silent transmission, other), Clutches, Collars (shaft), Couplings (shaft), Gearmotors, Gears (bevel, helical, spur), Motors (electric d.c., electric poly-phase a.c., electric single-phase a.c., hydraulic, variable speed), Pillow blocks, Pulleys, Speed reducers (bevel gear, helical gear, planetary gear, shaft mounted, spur gear, worm gear), Sheaves, Sprockets, Variable speed transmission.

*Branch Office*

Calif., Los Angeles — 1950 So. Olive St. RI 7-0161

**BECKMAN/BERKELEY DIV.**, 2200 Wright Ave., Richmond 3, Calif.

Analog computers, Electronic counters, Digital frequency meters, Time interval meters, Counter-controllers, Digital voltmeter.

*Branch Office*

Calif., Los Angeles — Los Angeles Computation Center, 305 Parkman Ave. DU 2-2109 (for analog computers only).

*Representatives*

Calif., Los Angeles — V. T. Rupp Co., 307 Parkman Ave. DU 7-8224  
Calif., San Carlos — R. L. Pflieger Co., 1652 Laurel St. LY 1-0396  
Calif., San Diego — V. T. Rupp Co., 3150 El Cajon Blvd. AT 2-0642  
Colo., Denver — Williams & Assoc., Inc., 2261-63 So. Albion St. SK 6-9403  
N. Mex., Albuquerque — V. T. Rupp Co., 1437 San Mateo, N. E. AL 6-0798  
Wash., Seattle — Rush S. Drake Assoc., 1806 Bush Pl. EA 3-8545

**BECKMAN SYSTEMS DIV., BECKMAN INSTRUMENTS, INC.**, 325 No. Muller Ave., Anaheim, Calif. PR 4-5430

Electronic data processing and automatic control equipment.

*Representatives*

Ariz., Tucson — G. S. Marshall Co., 2030 E. Broadway. MA 2-4719  
Calif., San Carlos — R. L. Pflieger Co., 1652 Laurel St. LY 1-0396  
Calif., San Diego — G. S. Marshall Co., 3525 Fifth Ave. CY 8-2234  
Calif., San Marino — G. S. Marshall Co., 2065 Huntington Dr. RY 1-6781  
Wash., Seattle — Rush S. Drake Assoc., 1806 Bush Pl.

**BE-GE MANUFACTURING CO., P.O. Box 67, Gilroy, Calif.**

Hydraulic gear pumps, Valves, Hydraulic power control units, Cylinders for farm and industrial uses.

*Branch Offices*

Calif., Oakland—1066 47th Ave. KE 2-2511  
Ore., Portland—130 S.E. Morrison St. BE 2-5124

*Representatives*

Ariz., Phoenix—Air-Draulics Co., 3135 No. 29th Ave. AL 8-6441  
Calif., Monrovia—Hydraulic Equipment Co., 1208 Vail Ave. RA 3-1139  
Calif., Stockton—Towner-Meyer Co., 3010 E. Fremont St. HO 6-7015  
Ore., Portland—Ray Bobbs Air-Draulics, Inc., 218 S.E. 12th Ave. BE 2-6133  
Wash., Spokane—Calkins Mfg. Co., No. 1102 Atlantic St. FA 5-4518

**BELLOWS CO.**, 230 W. Market St., Akron 3, Ohio

Air motors, Electrosize valves, Explosion proof valves, Hydro-Checks, Drill feeds, Grinder feeds, Bellows-Locke drill and tamping units, Carbide-Drill heavy duty drill units, Rotary feed tables, Rotary index tables, In-line work feeders, Work holding and clamping devices, Arbor presses, Power Dame air cylinders, Han-D-Air cylinders, Electric solen valves, Bel-Air valves, Pencil Sizer

grinders, Lubri-Air controls, Sensitorque drill feeds, Bellows-Locke drill heads, Valvair heavy-duty air and hydraulic cylinders.

*Branch Offices*

Ariz., Phoenix—3121 E. McDowell Rd. BR 5-0211  
Calif., Glendale—926 Western Ave. CH 5-6911  
Calif., San Diego—3694 Kettner Blvd. CY 8-7223  
Calif., San Francisco—1485 Bayshore. JU 5-8900  
Calif., San Mateo—126 W. 25th Ave. FI 5-7812  
Colo., Denver—1305 S. Ivanhoe Way. SK 6-1057  
Ore., Portland—1222 S. E. Seventh Ave. BE 4-2672  
Utah, Salt Lake City—559 S. Third W. EM 4-5874  
Wash., Seattle—2 Hanford St. MU 2-1652

**BESLY-WELLES CORP.**, 170 Dearborn Ave., South Beloit, Ill.

Taps, X-press taps, Drills, Reamers, End mills, Gages, Carbide tools, Disc grinders, Abrasives.

*Branch Office*

Calif., Los Angeles — 3224 Union Pacific Ave. AN 8-1901

**BINKS MANUFACTURING CO.**, 3114-44 W. Carroll Ave., Chicago 12, Ill.

Air compressors, Hose (air), Regulators (pressure).

*Branch Offices*

Calif., Los Angeles—4915 Pacific Blvd. LU 1-0136

Calif., San Francisco—050 Newhall St. AT 2-4985

Wash., Seattle—514 Denny Way, MA 3-1350

*Representatives*

Calif., San Diego—C. E. McHugh, 1952 Rexford Dr. CO 2-1037

Colo., Denver—R. O. Day, 23 So. Depew Dr. BE 3-5284

Utah, Salt Lake City—Generator Supply Co., 1578 So. Second St. W. HU 7-4515

**BLACKHAWK INDUSTRIAL DIV., BLACKHAWK MFG. CO.**, 5325 W. Rogers St., Milwaukee 46, Wis.

Mechanical and hydraulic force application and lifting equipment; Hydraulic pumps, cylinder, transmission/control components; Accessory attachments and tools, Hydraulic pipe banders, Knockout punches, Electricians' tools.

*Representatives*

(Available through industrial distributors in all principal Western cities.)

**BODINE ELECTRIC CO.**, 2500 W. Bradley Pl., Chicago 18, Ill.

Reducer and non-reducer electric fractional hp. motors, 1/2000 to 1/6 hp. Over 3500 standard motors in all types and sizes.

*Representatives*

Calif., Los Angeles—Andrews Hardware & Metal Co., 336 So. Main St. MA 9-5030

Calif., Los Angeles—Minarik Electric Co., 224 E. 3rd St. MA 4-3161

Calif., Oakland—Calif. Electric Co., 3015 Adeline St. OL 5-6100

Calif., San Leandro—Republic Supply Co., of Calif., 1919 Williams St. EL 7-2211

Ore., Portland—Donal Co., P.O. Box 7013.

**BOGUE ELECTRIC MFG. CO.**, 52 Iowa Ave., Paterson 3, N. J.

Motors, Generators, Motor generator sets, Control panels, Semi-conductor devices, Transformers.

*Branch Offices*

Calif., Beverly Hills — 365 So. Crescent Dr. CR 4-2711

Calif., San Carlos — 1973 St. Francis Way. LY 1-4317

Kan., Topeka — (serves Colorado-Utah)—1197 Warren St. CE 4-8347

Wash., Seattle — 4227 Airport Way. MA 4-8650

**BOILER ENGINEERING & SUPPLY CO., INC.**, Phoenixville, Pa.

"Continental" automatic packaged boiler, "Flow-Kontrol" H-T-W boiler.

*Representatives*

Ariz., Phoenix—Hennessey Equipment Sales Co., 4808 No. Seventh Ave. CR 7-7628

Calif., El Cerrito—American Engineering Corp., 11636 San Pablo Ave. LA 5-6291

Calif., Los Angeles — H. B. Brown Co., 1273 Westwood Blvd. BR 2-5639

Colo., Denver—Horbit & Co., 2329 Champa St. AM 6-2691

N. Mex., Albuquerque—Landes, Zachary & Peterson Co., 5900 Domingo Rd. N. E. AL 6-9449

Ore., Portland — F. W. Caleson Co., 1238 N. W. Glisan St. CA 3-9814

**BOND CO., CHARLES**, 617 Arch St., Philadelphia 6, Pa.

Drive belting (leather), Couplings (shaft), Gears (bevel, helical, spur, worm), Speed reducers (worm gear).

*Branch Offices*

Calif., Los Angeles—104 W. 75th St.

*Distributors*

Calif., El Centro—Winn Supply Co., 354 E. Main

Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St.

Calif., Los Angeles—Associated Gear & Machine Co., 829 Santa Fe Ave.

Calif., Maywood—Bay City Bearing Co., 5275 Atlantic Blvd.

Calif., Sacramento—Capital Machine & Welding Works, 83 No. 17th St.

Calif., San Diego—Winn Supply Co., 236

Seventh Ave.

Calif., San Francisco—Renstrom Gear & Machine Works, 514 Bryant St.

Calif., Stockton—Geiger Iron Works, Inc., Scotts Ave. and Pilgrim St.

Wash., Seattle—Chain Gear, Inc., 820-24

First Ave. So.

**BORG WARNER CORP.**, see INGER-SOLL KALAMAZOO DIV., PESCO PRODUCTS DIV.

**BOSTON GEAR WORKS**, Quincy 71, Mass.

Bearings (ball), Chains for drives (roller), Collars (shaft), Couplings (shaft), Gearmotors, Gears (bevel, helical, spur, etc.), Gears (worm), Hangers (shaft), Pillow blocks, Pulleys, Reducers, speed (bevel gear, helical gear, shaft mounted, worm gear), Sprockets, Transmissions, variable speed.

*Branch Offices*

Calif., Burbank—716 No. Parish Pl.

Calif., Oakland—4770 San Pablo Ave. OL 4-4687, 88-89

Wash., Bellevue—1833 116th N.E.

*Representatives*

Ariz., Phoenix—Garrett Supply Co., 2950 W. Thomas Rd. AP 8-5511

Calif., Los Angeles—Andrews Hardware & Metal Co., 334 So. Main St. MA 9-5030

Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave. LU 8-7221

Calif., San Francisco—C. W. Marwedel, 1235 Mission St. UN 1-2125

Calif., San Jose—C. W. Marwedel, 1310 No. Tenth St. CY 7-8207

Colo., Denver—Western Belting Co., 1720 Wazee St. AL 5-1476

Ore., Portland—J. E. Hazelton & Co., 115 S.W. Second Ave. CA 8-7511

Utah, Salt Lake City—Industrial Supply Co., Inc., 131 Social Hall Ave. EM 3-6727

Wash., Seattle—Campbell Ind. Supply Co., 3433 Airport Way

Wash., Seattle—Cragin & Co., 932 First Ave. So. MA 3-0052

Wash., Spokane—J. E. Hazelton & Co., No. 1101 Division St. FA 7-4448

Wash., Tacoma—Campbell Ind. Supply Co., 1924 Pacific Ave.

**BRISTOL CO.**, P.O. Box 1790 WIP, Waterbury 20, Conn.

Recording, automatic controls, indicating, alarm and telemetering instruments for all measurable industrial functions.

*Branch Offices*

Calif., Los Angeles—6800 E. Acco St. RA 3-9751

Calif., San Francisco—40 Berry St. GA 1-5462

Colo., Denver—4555 E. 46th Ave. DE 3-6228

Ore., Portland—2210 N. W. Roosevelt Ave. CA 6-2409

Utah, Salt Lake City—138 So. Second E. EL 5-0276

Wash., Seattle—101 Jones Bldg. MA 3-3361

**BROS. INC.**, 1057 Tenth Ave. S.E., Minneapolis 14, Minn.

Shop-assembled water tube boilers, Field-erected water tube boilers, Dumping grate stokers, Continuous ash discharge stokers, Hi-Heat oil heaters.

*Representatives*

Calif., Los Angeles—Frank M. Beeson, 1511 W. 27th St. RE 5-9820

Colo., Denver—Lucas Eng. Co., 3321 Walnut St.

Ore., Portland—Robert E. Wiegand, 1415 N. Euclid Ave. AT 2-8809

Utah, Salt Lake City—James J. Burke Co., 422 W. Ninth So. EM 3-1001

Wash., Seattle—Arthur L. Benny, 7336-17th Ave. N.W.

# BROWN, DAVID—CHAIN BELT

**BROWN, DAVID, INC.**, 999 Beecher St., San Leandro, Calif.

See advertisement on page 113

Clutches, Gearmotors, Gears (bevel, helical) Gears (worm), Increases (speed), Reducers, speed (bevel gear, helical gear, planetary gear, shaft mounted, spur gear, worm gear), Transmission, variable speed.

*Branch Offices*

Calif., Los Angeles — 6025 Atlantic Blvd. LU 1-6661  
Ore., Portland — 1224 S. W. Morrison. CA 7-7353

*Representatives*

Ariz., Flagstaff—Semon Industrial & Welding Supply, 27 Mikes Pike.  
Ariz., Glendale — Semon Industrial Supply, 133 So. Third Ave. YE 7-2424  
Ariz., Phoenix — Semon Bearing Co., 325 No. Third Ave. AL 8-7564  
Calif., Arcata — Industrial Electric Service Co., 960 Fourth St.  
Calif., Crescent City — Industrial Electric Service Co., P. O. Box 283.  
Calif., El Centro — Winn Supply Co.  
Calif., San Diego — Winn Supply Co., 1676 Main.  
Ore., Portland — Berg-Evans Chain Co., 240 S. W. First Ave.  
Utah, Salt Lake City — Bearing Engineering & Sales Co., 756 So. Second W.  
Wash., Seattle — Berg-Evans Chain Co., 2221 Fourth Ave. So. MA 2-2060

**BRUNNER DIV., DUNHAM-BUSH, INC.**, 179 South St., W. Hartford 10, Conn.

L.P. Gas transfer units, Air compressors (1/4-150 hp.).

*Branch Offices*

Calif., Los Angeles—3520 Council St. DU 5-6471  
Calif., San Francisco—1485 Bayshore Blvd. JU 5-7585

*Representatives*

Ariz., Phoenix—G. L. Jackson, 932 E. San Miguel, CR 4-0022  
Calif., Encino—R. J. Bowen, Jr., 16725 Oakview Dr. DU 5-6471  
Calif., Fair Oaks—Larry Donnenwirth, 7445 San Nita Way, YO 7-6424  
Calif., Granada Hills—Don E. Rodger, 10521 Balboa Blvd. DU 5-6471  
Calif., Los Angeles—Ronald S. Boreham, 1206 Maple Ave. RI 9-9251  
Calif., Novato—Jerry Howarth, 515 Arthur Ave. TW 2-3500  
Calif., San Francisco—Robert H. Sanderson & Associates, 221 - 11th St. HE 1-6246  
Calif., San Leandro—Alfred R. Lowey, 14919 Lark St. EL 7-5120  
Calif., So. San Gabriel—J. Bart Fairchild, 3337 No. Charlotte Ave. DU 5-6471  
Colo., Denver—R. W. Bell, 5075 Colorado St. SK 6-8050  
N. Mex., Albuquerque—Vernon Congable, 833 Indiana S. E. AL 6-0749  
Ore., Oswego—Dave Dufur, 530 Fourth St. BE 4-7446  
Ore., Portland—Dirks & Co., 416 N.W. 14th Ave. CA 2-1903  
Utah, Salt Lake City—J. H. Hays Sales Co., 1655 Harvard Ave. EL 5-5460  
Utah, Salt Lake City—Jerry Wilcox, 2280 S. 18th St. E.  
Wash., Bellevue—Cecil V. Critser, 15823 S. E. 24th St. MA 2-4630

**BRYANT ELECTRIC CO., THE**, 1421 State St., Bridgeport 2, Conn.

Complete line of wiring devices.

*Branch Office*

Calif., Los Angeles—3310 Leonis Blvd. LU 8-3243

*Representatives*

Calif., Claremont—R. C. Davis, 740 Briarcroft Rd. ND 6-8835  
Calif., Concord—R. S. Opelt, 3183 Reva Dr. MU 5-3182  
Calif., Los Angeles—F. G. Howz, 352 No. Huntley Dr. OL 2-0510  
Calif., San Bruno—J. H. Donahoo, 2404 Whitman Way. JU 3-3849, YU 6-3962  
Calif., San Gabriel—R. L. Gill, 1309 Mt. Vernon Dr. AT 1-6406, LU 8-3243  
Calif., West Covina—J. S. Murphy, 1425 So. Sandia Ave. ED 7-5319  
Ore., Portland—L. P. Stapley, 11055 S.E. Stephens St. AL 2-6143, CA 8-6443  
Wash., Seattle—A. W. Bauer, 3434 60th Ave. S.W. WE 2-6570, MA 3-6662

**BUCHANAN ELECTRICAL PRODUCTS CORP.**, 507 V.S. 22, Hillside, N.J.

Electrical components, connectors, and fittings—blocks (heavy-duty one-piece blocks, sectional heavy-duty pres-SURE-blocks, sectional medium duty pres-SURE-blocks). Connectors (solderless connectors and insulators, solderless terminal lugs, solderless connector and lug installation, pres-SURE-tools and crimping dies), fittings (conduit and box hardware and fittings).

*Representatives*

Calif., Los Angeles—Frank Rozema, 412 Seaton St. MA 9-3855  
Colo., Denver—Fred A. Pease, 4921 E. 38th St. FR 7-2336, -1333  
Ore., Portland—Keeler, White Co., 322 N. W. Fourth Ave. CA 7-0593  
Wash., Seattle—Keeler, White Co., 1041 Sixth Ave. So. MA 3-2367

**BULLDOG ELECTRIC PRODUCTS DIV., ITE CIRCUIT BREAKER CO.**, Box 177, Detroit 32, Mich.

Electrical power distribution and protection equipment.

See advertisements on pages 53 & 55

*Branch Office*  
Calif., Los Angeles—Bull Dog Electric of Los Angeles, 2885 E. Washington Blvd. AN 9-8101

*Representatives*

Calif., Oakland—Safety Switchboard Co., 910 89th Ave. LO 9-7001  
Colo., Denver—Young Electric & Mfg. Co., 2134 Curtis St. AC 2-4841  
Ore., Portland—Coast Electric & Mfg. Co., P.O. Box 7712. AT 8-5373

**BUNTING BRASS & BRONZE CO.**, 715 Spencer St., Toledo 1, Ohio

Bearings, Bushings, Bars, Special parts of cast bronze and sintered metals.

*Branch Office*

Calif., Los Angeles—240 W. 18th St. RI 9-3549  
Calif., San Francisco—277 Seventh St. UN 1-5044

**BURGESS BATTERY CO., DIV. OF SERVEL, INC.**, Freeport, Ill.

Dry batteries.

*Branch Office*

Calif., Los Angeles—1855 Industrial St. MA 8-9141

**BUSSMANN MANUFACTURING DIV., McGRAW-EDISON CO.**, University at Jefferson, St. Louis 7, Mo.

Fuses.

*Branch Offices*

Calif., Los Angeles—1004 E. 4th St. MA 5-1954

Calif., San Francisco—2168 Market St. UN 3-2600

Wash., Seattle—513 E. 125th St. MA 2-0737

**B/W CONTROLLER CORP.**, 2200 E. Maple Rd., Birmingham, Mich.

Floateless liquid level controls, Solenoids, Motor controls.

*Representative*

Calif., Berkeley—Geraty Engineering Specialties, 380 Colusa Ave. LA 5-5645

**C & D BATTERIES, INC.**, Washington & Cherry Sts., Conshohocken, Pa.

Lead acid storage batteries, 12-v. Silicon chargers.

*Representatives*

Ariz., Phoenix—213 No. First Ave. AL 4-1393

Calif., La Jolla—722 Fern Glenn. GL 4-6757

Calif., Los Angeles—Fred Pelletier Co., 1014 Venice Blvd. RI 9-4471

Calif., San Francisco—McCormick Morgan Co., 324 Fifth St. SU 1-6591

Colo., Denver—Howard Toncray, 1732 Blake St. CH 4-1102

Utah, Salt Lake City—Toncray Equip. Co., 1347 So. 17th E. IN 6-9186

Wash., Seattle—Joseph C. Platt Co., 111 Bell St. MA 3-6141

Wash., Spokane—Automotive Electric Co., E. 125 Mission St. FA 5-5379

**CALIFORNIA BELTING & LEATHER CO.**, 1131 So. Main St., Los Angeles 15, Calif.

Waterproof leather belting, Rubber and composition belting.

**CANNON ELECTRIC CO.**, 3208 Humboldt St., Los Angeles 31, Calif.

Electrical connectors for all types of battery or power circuits.

*Branch Office*

Calif., Santa Ana—666 E. Dyer Rd. KI 5-7121

*Representatives*

Calif., Palo Alto—W. V. Brainard, 335 Midfield Rd. DA 6-5421

Colo., Denver—Allen I. Williams Co., 2263 Albion St. SK 6-9403

Wash., Seattle—J. J. Backer Co., 221 W. Galer St. AT 3-6470

**CAROL CABLE CO.**, 190 Middle St., Pawtucket, R.I.

Wire and cable (electric).

*Representatives*

Calif., Los Angeles—Jack Payne Co., Inc., 1101 E. Fifth St. MA 4-7317

Calif., San Francisco—F. M. Nicholas, 714 Harrison St. YU 2-1964

Ore., Portland—Bruce-Emmett Co., 830 S. E. Alder St. BE 2-8117

Wash., Seattle—Bruce-Emmett Co., 1016 First Ave. So. MU 2-6737

**CARTER CONTROLS, INC.**, 2800 Bernice Rd., Lansing, Ill.

Cylinders (air, hydraulic), Valves, Rotary Actuators.

*Representatives*

Calif., Burbank—Roger Howell Co., 1802 W. Olive, VI 9-1803

Calif., Burlingame—Airdraulic Industrial Products Co., 1110 Carolin Ave. DI 3-2022

Ore., Portland—R. E. Bobbs Co., Airdraulics, 218 S.E. 12th Ave. BE 2-6133

Utah, Salt Lake City—Specialty Sales Co., 117 W. Second St. So. DA 2-5553

Wash., Seattle—Geo. W. Warden Co., Inc., 1305 Dexter Ave. AT 3-0622

**CASCADE MANUFACTURING CO.**, 2201 N.E. 201st Ave., Portland 20, Ore.

Cylinders (air, hydraulic), Lift truck attachments (hydraulically actuated).

**CERTIFIED FLEXIBLE COUPLINGS, INC.**, 39 No. Bond St., Mt. Vernon, N.Y.

Flexible couplings.

*Representatives*

Calif., Oakland—Pacific Pump

Calif., San Francisco—Brooks Equipment

Colo., Denver—Denver Equipment

Ore., Portland—Pacific Pump

**CHAIN BELT CO.**, 4701 W. Greenfield Ave., Milwaukee 1, Wis.

(also see SHAFER BEARING DIV.)

Bearings (roller), Chains for drives (detachable link, roller), Clutches, Collars (shaft), Couplings (shaft), Pillow blocks, Sprockets.

See advertisement on page 125

*Branch Offices*  
Calif., Berkeley—2940 Seventh St. TH 3-6801

Calif., Los Angeles—7601 Telegraph Rd. RA 3-4751

Colo., Denver—110 16th St. CH 4-7467

Ore., Portland—2310 N.W. 24th Ave. CA 3-6121

Utah, Salt Lake City—10 Exchange Pl. EL 9-6679

Wash., Seattle—2425 Airport Way. MU 6750

*Distributors*

Ariz., Phoenix—Garrett Supply Co., P.O. Box 11038

Ariz., Tucson—Tucson Bearing Co., 1100 So. Park Ave.

Calif., Bakersfield—All Bearing Service, Inc., 2728 Chester Ave.

Calif., Bakersfield—Hopper Machine Works, 301 26th St.

Calif., Burbank—Valley Equip. & Supply Co., 439½ Victory Blvd.

Calif., Long Beach—Bay City Bearing Co., P.O. Box 183, Route 1

Calif., El Centro—W. H. Douthitt Steel & Supply Co., P.O. Box 183, Route 1

Calif., Eureka—Eureka Boiler Works & Acme Foundry Co., Foot "S" St.

Calif., Fresno—Valley Foundry & Machine Works, 2510 So. East Ave.

Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St.

Calif., Los Angeles—Bay City Bearing Co., Inc., 5275 Atlantic Blvd.

Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.

Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave.

## CHAIN BELT—CLARK CONTROLLER

Calif., Los Angeles—Republic Supply Co. of Calif., 2000 So. Eastland Ave.  
 Calif., Oakland—Bay City Iron Works, 4th and Washington Sts.  
 Calif., Oxnard—Ventura County Bearing House, 134 Palm Dr.  
 Calif., Pomona—Reliable Bearing & Supply Co., 777 E. Second St.  
 Calif., Redding—Gerlinger Steel & Supply, 1539 Placer  
 Calif., Riverside—Reliable Bearing & Supply Co., 3545 Main St.  
 Calif., Sacramento—Capital Machine Welding Works, #3 No. 17th St.  
 Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St.  
 Calif., San Diego—All Bearing Service, Inc., 255 Seventh Ave.  
 Calif., San Diego—Winn Supply Co., 256 7th Ave.  
 Calif., San Jose—Bearing & Equipment Co., 52-56 Locust St.  
 Calif., San Leandro—Republic Supply Co. of Calif., 1919 Williams Ave.  
 Calif., Santa Maria—The Bearing House, P.O. Box 932, Pescos Rd.  
 Calif., Stockton—Bearing Supply, 300 N. Wilson Way.  
 Calif., Stockton—Guntert & Zimmerman Sales Div., P.O. Box 1688  
 Calif., Taft—Hopper Machine Works  
 Calif., Ukiah—Klamath Machinery & Locomotive Works of Calif., 720 No. State St.  
 Calif., Ventura—Ventura County Bearing House, 1258 No. Ventura Ave.  
 Colo., Denver—Union Supply Co., 5460 Colorado Blvd.  
 Ida., Pocatello—Paul Roberts Div., Steel Industrial Supplies, 850 So. Main St.  
 Ida., Twin Falls—Paul Roberts, 356 4th Ave.  
 Ida., Wallace—Bitco, Inc.  
 Mont., Billings—Hall-Perry Machinery Co., 902 Central Ave.  
 Mont., Butte—Hall-Perry Machinery Co., 812 E. Iron St.  
 Mont., Great Falls—Hall-Perry Machinery Co., 1116 15th St. No.  
 Mont., Missoula—Hall-Perry Machinery Co., 127 E. Main St.  
 Nev., Las Vegas—Reliable Bearing & Supply Co., 2700 So. Highland Dr.  
 Nev., Reno—Pioneer Equipment Co. of Nevada, Kletzke Lane.  
 N. Mex., Albuquerque—Gorman Engineering Co. of New Mexico, 1330 N. 12th St.  
 N. Mex., Albuquerque—Montezuma Bearing Co., 1413 First St. N.W.  
 N. Mex., Carlsbad—Carlsbad Supply Co., P.O. Box 1042.  
 Ore., Baker—Basche-Sage Hardware Co., 2101 Main St.  
 Ore., Coos Bay—A. B. Daly Co., 824 N. Front St.  
 Ore., Eugene—Harmer Co., 209 Polk St.  
 Ore., Klamath Falls—Klamath Machinery Co., 445 Spring St., P.O. Box 781.  
 Ore., La Grande—Basche-Sage Hardware Co., 1409 Adams Ave.  
 Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman St.  
 Ore., Portland—Harshberger Equipment Co., 425 S.E. Ninth Ave.  
 Ore., Portland—H. W. Sharp Co., 71 S.W. Oak St.  
 Ore., Prineville—Prineville Machine & Supply Co., P.O. Box 85.  
 Ore., Roseburg—Industrial Supply Co., 1928 Airport Rd.  
 Ore., Salem—Salem Steel & Supply Co., 180 Court St., P.O. Box 746.  
 Utah, Helper—Carbon Transfer & Supply, P.O. Box 180.  
 Utah, Salt Lake City—Bearings Engineering & Sales Co., 756 So. Second W.  
 Wash., Aberdeen—Whitcher Machinery Co., 411 E. State St.  
 Wash., Everett—Everett Hardware Co., 2718 Broadway  
 Wash., Seattle—Washington Machinery Co., 7329 E. Marginal Way.  
 Wash., Spokane—Bitco, Inc., E. 4145 Trent Ave.  
 Wash., Walla Walla—Morrison Supply Co., 217 E. Alder St.  
 Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

### CHANCE, A. B., CO., 210 N. Allen St., Centralia, Mo.

Anchors, Guying materials, Cutouts, Switches, Clamps, Connectors, Tools, Hoists, Fuses.

*Branch Offices*

Calif., San Francisco—515 Tennessee, MI 7-1300  
 Ore., Portland—1220 S. Stark St. CA 8-3866  

*Representatives*

Calif., Woodland Hills—J. R. Rice, 23240 Ostron Dr. DI 7-2202  
 Colo., Denver—M. R. Parkin, 1134 Kearney St. FL 5-8521

**CHICAGO-ALLIS MFG. CORP., 113-125 No. Green St., Chicago 7, Ill.**  
*Drive belting (leather).*  
*Representative*  
 Calif., Sepulveda — Joe Gurskis, 9280 Rutherford Ave. EM 2-0588

**CHICAGO PNEUMATIC TOOL CO., 6 E. 44th St., New York 17, N.Y.**  
*Stationary air and gas compressors in sizes to 5,000 hp. for pressures to 15,000 psig. Portable compressors in capacities to 900 cfm. Diesel engines from 120 to 2,280 hp.*  
*Branch Offices*  
 Calif., Los Angeles—6935 Bandini Blvd. RA 3-8731  
 Calif., San Francisco—855 Bryant St. HE 1-7928  
 Colo., Denver—465 Acoma St. RA 2-2813  
 Utah, Salt Lake City—156 W. Fourth So. EL 5-2985  
 Wash., Seattle—2901 First Ave. So. MA 2-3930

**CHIKSAN CO., 330 N. Pomona Ave., Brea, Calif. JA 9-2121**  
*Fittings and couplings (air, hydraulic), Joints (rotating, swivel).*

*Branch Office*  
 Calif., Oakland—600 16th St. GL 2-4202  

*Representatives*

Ariz., Phoenix—Cone & Wallace Co., 1325 So. 26th. BR 5-4496  
 Ore., Portland—Henry Kalz Co., 4023 No. Interstate Ave. AT 7-9700  
 Utah, Salt Lake City—The Lang Co., 1st So. 2nd West. DA 8-8341  
 Wash., Seattle—E. C. Griffin Co., 539 1st Ave. So. MA 3-4216

**J. D. CHRISTIAN ENGINEERS, 480 Potrero Ave., San Francisco 10, Calif.**

Rite Lo speed gearmotors, Tork-Foot speed reducers, P.P.T. motorized pulleys, Havi-Edge manganese steel screw conveyors, D.N.D. belt conveyor idlers.

*Representatives*  
 Ariz., Scottsdale — Yancey Sales, Inc., 64 W. Second St.  
 Colo., Denver — Toncray Equipment, 1732 Blake St.  
 Ida., Twin Falls — C. K. Brown & Assoc., 401 Shoshone St. So.  
 Ore., Eugene — Harmer Co., 209 Polk St.  
 Ore., Portland — Harmer Co., 1515 N. W. Hoyt.

**CHRISTIE ELECTRIC CORP., 3410 W. 67th St., Los Angeles 43, Calif. PL 3-2607**

Stavolt automatically regulated power rectifiers in Silicon; Rectodyne manually controlled power rectifiers.

*Representatives*  
 Calif., San Carlos — C. R. Dalton Associates, 132 El Camino Real. LY 1-2654  
 Calif., San Diego — David G. DeHaas Co., 3651 Garrison St. AC 2-3275  
 Colo., Denver — Parrish Electronics, 1810 So. St. Paul. SK 6-6884  
 Wash., Seattle — Samuel N. Stroum Co., 1612 Broadway. EA 3-6117

**CHRYSLER CORP., see AMPLEX DIV. CIRCLE SEAL PRODUCTS CO., INC., 2181 E. Foothill Blvd., Pasadena, Calif. MU 1-4966**

Valves (air power line, hydraulic power line).

*Representatives*  
 Ariz., Cornville—Fred O. Rodgers, ME 4-2448  
 Calif., Bakersfield—Fred C. Gilbert, 3908 Pierce Rd.  
 Calif., San Diego—Fowble Equipment Co., 1205 Cushman St. CY 8-9955  
 Calif., San Jose—Power Transmission, 86 Keyes St. CY 4-8181  
 Colo., Denver—Instrument Service Co., P. O. Box 5048. AL 5-2167  
 Wash., Seattle—Precision Valve Sales, Boeing Field, P.O. Box 15. PA 3-7602.

**CLARK CONTROLLER CO., 1146 E. 152nd St., Cleveland 10, Ohio.**

Control centers, Controls (electric, electric motor), Switches (automatic, electric).

*Branch Offices*  
 Calif., Los Angeles—4755 E. 49th St. LU 3-6366  
 Calif., San Mateo—72 E. 3rd Ave. DI 2-6051  

*Representatives*

Colo., Denver—Peterson Co., 4949 Colorado. DE 3-5434

Ida., Boise—C. W. Silver Co., 1118 No. 20th. Phone 2-6947  
 N. Mex., Albuquerque—Associated Engineers, 419 Central Ave. N.W.  
 Ore., Portland—Andrew L. Polich, Inc., 734 N.W. Glisan. CA 3-6241  
 Utah, Salt Lake City—C. W. Silver Co., 550 W. Seventh St. EL 5-5378  
 Wash., Seattle—H. M. Denney Co., 111 W. Harrison. AT 4-0530

*Distributors*

Ariz., Phoenix—Reliable Electric Co., 802 W. Jefferson  
 Calif., Bell—Bell Wholesale Electric Co., 4346 E. Gage Ave.  
 Calif., Downey—Electrical Distributors, 8850 Cleta St.  
 Calif., El Monte—Black & Kindrick Electric Wholesale Co., 11614 McBean Dr.  
 Calif., Hollywood—Hollywood Wholesale Electric Co., 6820 Romaine St.  
 Calif., Inglewood—Inglewood Wholesale Electric 923 So. Prairie Ave.  
 Calif., Lancaster—Cal State Electric Supply Co., 45043 No. Yucca St.  
 Calif., Long Beach—Mon-Arc Electrical Supply, 6635 Minnesota Ave.  
 Calif., Los Angeles—Associated Wholesale Electric, 1111 Santee St.  
 Calif., Los Angeles—JHN Engineering Co., 1518 Paloma St.  
 Calif., Los Angeles—Industrial Wholesale Electric, 805 E. Pico Blvd.  
 Calif., Los Angeles—Thomas W. Simmons, 650 S. Grand Ave.  
 Calif., No. Hollywood—Cal-State Electric Supply Co., 5410 Vineland.  
 Calif., Palm Springs—Tri-County Electrical Wholesalers, P.O. Box 2598  
 Calif., Riverside—Tri-County Electrical Wholesalers, 1755 Massachusetts Ave.  
 Calif., San Bernardino—Tri-County Electrical Wholesale Co., 453 So. 1st St.  
 Calif., San Bruno—Bergesen Wholesale Electric Co., 1051 San Mateo Ave.  
 Calif., San Diego—Pacific Wholesale Electric Co., 702 State St.  
 Calif., San Francisco—Buzell Electric Works, 130 8th St.  
 Calif., San Francisco—Control Products Co., 750 Natoma St.  
 Calif., San Jose—Consolidated Parts, Inc., 581 E. Taylor St.  
 Calif., Santa Ana—Orange County Wholesale Electric Co., 1226 So. Main St.  
 Colo., Denver—Consolidated Parts, Inc., 1075 Galapago St.  
 Colo., Denver—Weiner Bros. Electric Supply Co., 1201 Stout St.  
 Ida., Boise—Western Conveyor Co., 2801 Warm Springs Ave.  
 Ida., Idaho Falls—Electric Motor Service, 105 So. Utah Ave.  
 Ida., Idaho Falls—Electrical Contractors Supply, P. O. Box 1157.  
 Ida., Pocatello—Electrical Contractors Supply, 205 So. 3rd Ave.  
 Nev., Las Vegas—Tri-County Electrical Wholesaler, 1114 So. Second St.  
 Nev., Reno—Western Electrical Distributors Co., 2300 Valley Rd.  
 N. Mex., Albuquerque—State Electrical Supply Co., 1024 First St. N.W.  
 N. Mex., Carlsbad—H & E Electric Supply Co., 1030 No. Edward St.  
 Ore., Albany—Albany Electric Shop, 220 E. 2nd Ave.  
 Ore., Eugene—Vitus Electric Supply Co., 140 E. 5th Ave.  
 Ore., Grants Pass—Electric Motor Works, 1725 Williams Secondary  
 Ore., Pendleton—Carr Sales Co., 325 S.W. Emigrant St.  
 Ore., Portland—Caldwell Machinery Co., 738 N.W. Glisan St.  
 Ore., Portland—Clyde P. Carroll Machinery Co., 122 S.W. 1st Ave.  
 Ore., Portland—Industrial Electric Supply Co., 727 S.W. Front St.  
 Ore., Portland—Platt Electric Supply, Inc., 1305 N.W. Davis St.  
 Ore., Portland—Andrew L. Polich, Inc., 734 N.W. Glisan. CA 3-6241  
 Ore., Portland—C. E. Riggs, Inc., 317 N.W. Broadway.  
 Ore., Roseburg—Electric Motor Service Co., 1641 S.W. McLain Ave.  
 Utah, Orem—Roberts Electrical Wholesale Supply Co. State & Center Sts.  
 Utah, Salt Lake City—Water Works Equipment Co., 502 W. Third St. So.  
 Utah, Salt Lake City—Western Supply Co., 357 W. Second St.  
 Wash., Aberdeen—Aberdeen Electric Co., Inc., 217 E. Market St.  
 Wash., Pasco—Platt Electric Supply, 1515 Hickory St.  
 Wash., Seattle—Palmer Electric Co., 307 Westlake Ave. No.  
 Wash., Tacoma—Bean Electric Co., 2919 Alaska St.  
 Wash., Tacoma—Demick Electric Supply Co., 2919 Alaska St.  
 Wash., Walla Walla—Berry Electric Co., 301 S. 3rd St.

## CLAYTON—CONTINENTAL SALES

**CLAYTON MFG. CO.**, 401 No. Temple City Blvd., El Monte, Calif. AT 6-1161, CU 3-4131

Steam generators, Water softeners.

*Representatives*

Ariz., Phoenix — Arleigh Biebler, 2320 E. Curnow Dr. AM 5-6786  
Calif., San Gabriel — J. J. Billman, 1301 Abbott Ave. AT 4-0969  
Calif., San Gabriel — R. C. Welch, 356 Alahmara Terr. AT 9-4300  
Calif., Sunnyvale — J. C. Derus, 1580 Samedra, CH 5-0666  
Colo., Denver — S. F. Buscarello, 2963 So. Meade St. WE 6-4516  
Ore., Oswego — J. B. Burdick, 3344 S. W. Upper Dr. NE 6-2243  
Utah, Salt Lake City — Heatway Sales Co., 2319 So. Main St. HU 4-3451

*Distributors*

Ariz., Phoenix — High Craig Sales & Service, 1636 No. 26th Pl.  
Ariz., Phoenix — Geo. S. Thomson Co., Inc., 915 So. Central Ave.  
Ariz., Phoenix — Western Machinery Co., 620 No. 17th Ave.  
Calif., Fresno — Service Welding & Boiler Shop, 250 Broadway  
Calif., Gardena — Oil Heating Equipment Co., 17926 So. Broadway  
Calif., Los Angeles — Cherry-Burrell Corp., 4621 Pacific Blvd.  
Calif., Los Angeles — Garlinghouse, Fremont & Co., 6046 E. Washington Blvd.  
Calif., Los Angeles — Oil Well Heating Systems, Inc., 609 So. Grand Ave.  
Calif., Los Angeles — Paul C. Sink Co., Inc., 6201 So. Main St.  
Calif., Los Angeles — Smith-Booth-Usher Co., P. O. Box 3378, Terminal Annex.  
Calif., Oakland — Brose Co., 414 Santa Clara Ave.  
Calif., Redwood City — Western Power Equipment Corp., 909 Broadway.  
Calif., San Diego — Standard Iron Supply, Inc., 1821 Harbor Dr.  
Calif., San Francisco — Cherry - Burrell Corp., 2132 Palou Ave.  
Colo., Colorado Springs — Landes, Zachary & Peterson Co., P. O. Box 1488.  
Colo., Denver — Hurley Co., 2140 Market St.  
Colo., Denver — Landes, Zachary & Peterson Co., 601 So. Jason St.  
Colo., Denver — Miner Machine Co., 3321 Walnut St.  
Colo., Denver — Wagner Machine & Mill Supply, Inc., 444 York St.  
Colo., Denver — Western Machinery Co., 2400 W. Seventh Ave.  
Ida., Boise — Engineering Sales Service, Inc., P. O. Box 2796.  
Ida., Boise — Hood Northwest Sheet Metal Co., P. O. Box 2059.  
Mont., Billings — Seitz Distributing Co., 503 No. 25th St.  
N. Mex., Albuquerque — Landes, Zachary & Peterson, Inc., 4900 Domingo Rd. N. E.  
Ore., Portland — Monroe Food Machinery, Inc., 1600 S. W. Harbor Dr.  
Ore., Portland — A. W. Mortensen Co., 1117 S. E. Morrison.  
Ore., Portland — Star Machinery Co., 3325 N. W. Yeon Ave.  
Utah, Salt Lake City — Landes, Zachary & Peterson, Inc., 2301 So. Stage.  
Utah, Salt Lake City — Lindquist Boiler Co., 1374 So. State St.  
Utah, Salt Lake City — Utah Hydro Corp., 751 W. Eighth So.  
Utah, Salt Lake City — Western Machinery Co., 2300 So. Main St.  
Wash., Seattle — Monroe Food Machinery, Inc., 1226 First Ave. So.  
Wash., Seattle — Northern Commercial Co., P. O. Box 3562.  
Wash., Seattle — Star Machinery Co., 241 Lander St.  
Wash., Spokane — Monroe Food Machinery, Inc., 715 Madelia.  
Wash., Spokane — Star Machinery Co., 415 E. Sprague Ave.  
Wyo., Casper — Moss Equipment & Supply Co., 3100 E. Yellowstone.  
Wyo., Casper — Wyoming Automotive Co., Industrial Distributors, Inc., Box 1171.

**CLEAVER-BROOKS**, 326 E. Keefe Ave., Milwaukee 12, Wis.

Boilers (Packaged fire tube, steam or hot water, oil, gas, combinations fired, 15-600 hp.)

*Representatives*

Ariz., Phoenix — Carns-Hoaglund Sales Co., 420 No. 15th Ave. AL 2-2793  
Calif., Los Angeles — Heat & Power Equipment Co., 3430 Sunset Blvd. NO 3-3265  
Calif., San Francisco — R. F. MacDonald Co., 1485 Bayshore Blvd. JU 4-0648  
Colo., Denver — Industrial-Denver Co., 1600 11th St. AC 2-4791

Mont., Billings — Lefler Engineering Sales, 108 No. 23rd St. Phone 2-2105  
N. Mex., Albuquerque — B. o y d Industrial Engineering, Inc., 112 Granite, N. W. CH 3-2247  
Utah, Salt Lake City — J. Mel Brown Co., 2046 So. 11th E. HU 5-3523  
Wash., Seattle — Power & Controls, Inc., 5505 17th Ave., N.E. HE 3819

**CLEVELAND CONTROLS, INC.**, 1111 Brookpark Rd., Cleveland 9, Ohio

Control centers, Controls (electric), Instruments (measuring and testing), Panelboards (electric), Switches (electric), Boilers and boiler equipment.

*Branch Office*

Calif., San Francisco — 171 Second St. EX 7-0440

*Representatives*

Ariz., Phoenix — Cone & Wallace Co., 1325 S. 26th St. BR 5-4496  
Calif., Los Angeles — R. P. Carmien Co., 406 S. Main St. MA 2-0025  
Calif., San Francisco — General Combustion Equipment Co., 171 Second St.  
Colo., Denver — Automatic Control & Equipment Co., 5750 Pecos St. GE 3-6436  
Ida., Boise — Richardson Equip. Co., P. O. Box 902, Phone 3-9431  
Ore., Portland — Cascade Equipment Co., 216 N. E. Oregon St. BE 4-7433  
Utah, Salt Lake City — Power Engineering Co., 1806 S. State St. IN 7-6838  
Wash., Seattle — Control & Steam Equipment Co., 422 Smith Tower. EL 6622

**CLEVELAND PNEUMATIC INDUSTRIES, INDUSTRIAL SALES DIV.**, 64 Old Orchard, Skokie, Ill.

Air operated punch press feeds, Drill press feeds, Automatic tap or drill machine, Push-pull automation package, Multi-spindle drill heads, Rotary index tables, Hydraulic presses and impact hammers.

*Branch Office*

Calif., Covina — Roy B. Strohmeier, 18309 Benwood. ED 2-0663

*Representatives*

Calif., Los Angeles — Zonne Industrial Tool Co., 2226 So. San Pedro St. RI 7-0561  
Calif., Pasadena — Foothill Tool & Machinery Corp., 2308 E. Colorado St. RY 1-8926  
Calif., San Mateo — F. W. Strasmann Co., 600 So. Bayshore Freeway, DI 4-6464  
Wash., Seattle — L. C. Keir Co., 2726 First Ave. So.

**CLEVELAND WORM & GEAR CO.**, 3300 E. 80th St., Cleveland 4, Ohio

Drives (variable speed), Gears (worm), Reducers, speed (worm gear), Transmission, variable speed.

*Representatives*

Calif., Los Angeles — Mark-Costello Co., 1417 Georgia St. RI 9-2021  
Calif., San Francisco — Milligan-Spika Co., 1485 Bayshore Blvd. JU 5-8153  
Colo., Denver — Goble & Sampson, 1737 Franklin St. MA 3-6976  
Ore., Portland — Bearing Sales & Service, Inc., 1645 N.W. Hoyt St. CA 3-6301  
Utah, Salt Lake City — Sales Engineering Co., Inc., 203 W. Grass Ave. HU 5-3721  
Wash., Seattle — Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 2-0831

**CLIPPER BELT LACER CO.**, 974 Front Ave. N. W., Grand Rapids 2, Mich.

Belt and tape lacing equipment, Belt and tape cutters.

*Representative*

Calif., Richmond — William W. Knight, Santa Rita Rd. CA 3-1435

**COLUMBIA CABLE & ELECTRIC CORP.**, 255 Chestnut St., Brooklyn 8, N. Y.

Non-metallic sheathed cable, Armored bushed cable, Electrical metallic tubing, Flexible steel conduit, Liquid tight flexible steel conduit, Underground feeder cable.

*Representatives*

Calif., Los Angeles — Frank H. Bran Co., 607 E. Sixth St.  
Calif., San Francisco — Geo. R. Magness Co., 44 Berry St.  
Ore., Portland — Sanderlin Co., 56 S. E. Belmont St.  
Wash., Seattle — Sanderlin Co., 129 First Ave. W.

**COMBUSTION ENGINEERING, INC.**, 200 Madison Ave., New York 16, N. Y.

Boilers (all types), Fuel burning and related equipment.

*Branch Offices*

Calif., Los Angeles — 510 W. 6th St. TR 6828  
Calif., San Francisco — 155 Sansome St. YU 2-6262

Wash., Seattle — Skinner Bldg. SE 5218

*Representative*

Utah, Salt Lake City — Joy & Cox, Inc., 415 Judge Bldg. EM 4-5124

**COMMERCIAL SHEARING & STAMPING CO.**, 1775 Logan Ave., Youngstown, Ohio

Controls (fluid power), Motors, Pumps, Valves, Cylinders.

*Branch Office*

Utah, Salt Lake City — P.O. Box 2036. HU 4-4491

**CONTINENTAL ELECTRIC CO., INC.**, 325 Ferry St., Newark 5, N. J.

Generators (electric), Motors (electric DC, poly-phase AC).

*Branch Office*

Calif., Los Angeles — 1709 W. 8th St. HU 3-7931

**CONTINENTAL ELECTRIC EQUIPMENT CO.**, 205 W. Fourth St., Cincinnati 2, Ohio

High voltage switches (roll-out and stationary), Switchboards (15 kv. or less), Unit substations, Switchboards (600 v or less), Motor control centers, Bus duct (feeder and plug-in), Panelboards (circuit breaker or fusible switch type), Lead centers, Wireway, Steel boxes.

*Branch Office*

Calif., San Francisco — 1485 Bayshore Blvd. JU 7-3724

*Representatives*

Calif., Los Angeles — Murphy-Main Co., 2133 Bay St. MA 2-2138  
Calif., San Francisco — Arthur & Allen, 420 Market St. YU 2-3483  
Colo., Denver — Colorado Western Sales Co., P. O. Box 4133, So. Denver Sta. PE 3-3470  
N. Mex., Albuquerque — Ralph B. Black, 721 Loma Vista Dr. N. E. AL 5-9625  
Ore., Portland — Donal Co., P. O. Box 7013. CH 6-3131  
Wash., Seattle — Muth-Richards Co., 1804 Bush Pl. EA 3-2128

**CONTINENTAL SALES & SERVICE CO.**, 3817 Santa Fe Ave., Los Angeles, Calif.

Aircraft engines, Internal combustion engines (gasoline, butane, diesel, natural gas).

*Representatives*

Calif., Long Beach — I. C. Towner, 6961 Fairbrook, GE 1-5831  
Calif., Mt. View — Frank Bozicevich, P.O. Box 805. YO 7-5048  
Calif., Pasadena — B. H. Robinson, 1124 Del Mar. SY 3-4216  
Calif., San Gabriel — Albert W. Anderson, 410 No. Duane Ave. AT 2-6250  
Calif., So. Pasadena — Harold W. Burns, 614 Fremont. SY 9-6247

*Distributors*

Alaska, Anchorage — Airport Machinery Co., Inc., Fifth Ave. at Merrill Field  
Ariz., Phoenix — Automotive Sales Co., 146 So. Second Ave.  
Ariz., Tucson — State Tractor & Equipment Co., 1202 No. Main St. MA 4-2335  
Calif., Bakersfield — Glenn Rose Engine Co., 552 So. Real Rd.  
Calif., Fresno — Art Schedler's Engine Builders, 624 Broadway  
Calif., El Centro — Valley Auto Supply Co., 633 State St.  
Calif., Long Beach — Smith & Thorp, 141 E. Anaheim St.  
Calif., Los Angeles — Harval Truck Equipment Co., 1000 E. Eighth St.  
Calif., Maywood — M & M Truck Parts, 3501 E. Slauson  
Calif., Modesto — Barnes Machine Shop, 615 Third St.  
Calif., Oakland — California Equipment Co., 1724 Cypress St.  
Calif., Sacramento — Gerlinger Motor Parts, 2020 Kay St.  
Calif., San Diego — Auto Gear & Supply, 1369 State St.  
Calif., San Francisco — California Equipment Co., 660 Bryant St.  
Calif., San Jose — Penniman & Richards, 493 So. Market St.  
Calif., Santa Ana — Blystone Equipment Co., 2649 W. First St.  
Calif., Santa Ana — James Requaert, 111 Spurgeon St.

## CONTROL PANEL—DAYTON

Calif., Santa Maria—Nickson's Motor Parts & Machine, 1045 W. Chapel.  
 Calif., Stockton—Automotive Parts Co., 244 No. Hunter St.  
 Hawaii, Honolulu — Hawaiian Equipment Co., P. O. Box 2990  
 Ida., Idaho Falls—Automotive Equipment & Supply Co., 385 Airport Rd.  
 Ida., Twin Falls—Motor Mercantile Co., 434 Main Ave. So.  
 Nev., Las Vegas—Blystone Equipment Co., 2840 Fremont  
 Ore., Portland—Automotive Equipment Co., 311 N. E. Oregon St.  
 Utah, Ogden — Motor Mercantile Co., 2587 Grant Ave.  
 Utah, Salt Lake City — Motor Mercantile Co., 54 W. Seventh So.  
 Wash., Longview—Kellogg Automotive, 1340 Vandercook Way  
 Wash., Seattle—A. H. Cox & Co., 1757 First Ave. So.  
 Wash., Spokane—Skaggs Automotive, Inc., 1107 W. Second Ave.

## CONTROL PANEL CORP., 517 W. Monroe St., Chicago 6, Ill.

Automatic control panels, Control centers, Process control systems, Graphic panels.  
 Ariz., Tucson — Central Station Equipment Co., 2323 Aviation Hwy. MA 3-2493

## COOK, H. N., BELTING CO., 401 Howard St., San Francisco 5, Calif. DO 2-6681

Belted drive (chain or link), Belting, drive (composition, leather, rubber), Belts, V (composition, leather, rubber), Chains for drives (roller), Hoses (air, flexible metallic, hydraulic), Pulleys, Sheaves, Sprockets.

## COOPER SPLIT ROLLER BEARING CORP., Box 526, Locust St., Carnegie, Pa.

Split roller bearings, Pillow blocks.

### Representatives

Alaska, Anchorage—Bearing Engineering & Supply Co., 620 C St.  
 Ariz., Phoenix—Bearings, Belts & Chains, Inc., 120 So. Fourth Ave. AL 2-5251  
 Calif., Long Beach—Bearings, Belts & Chains, Inc., 2041 W. Anaheim St. HE 2-5494  
 Calif., Los Angeles—C. M. Lovsted & Co., 1001 N. Main St. CA 1-4202  
 Calif., Los Angeles—Bearings, Belts & Chains, Inc., 1940 So. Figueroa St. RI 7-9191  
 Calif., Maywood—Bearings, Belts & Chains, Inc., 4035 E. 52nd St. LO 5-5304  
 Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251  
 Calif., San Diego — Bearings, Belts & Chains, Inc., 745 15th St. BE 3-7278  
 Calif., San Francisco—Bearing Engineering Co., 1545 Mission St. HE 1-1500  
 Calif., San Francisco—H. J. Wickert & Co., Inc., 770 Folsom St. YU 6-5800  
 Colo., Denver—Bearing Service & Supply Co., 4433 Claude Ct. AC 2-5991  
 Colo., Grand Junction—Bearing Service & Supply Co., 12th & Ute Sts.  
 Ida., Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583  
 Ida., Idaho Falls—Bearing Service & Supply Co.  
 Ida., Pocatello—Western Bearings, Inc., 156 So. Third St. Phone 3518  
 Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W. Phone 4208, -9  
 Mont., Billings—Bearing Supply Co., Second Ave. and 12th St. No. Phones 9-1195, 9-3827  
 Nev., Reno—Sierra Machinery Co., Inc., 307 Morrill Ave. Phone 3-1301  
 Ore., Eugene—Bearing Sales & Service, 225 Seventh Ave. W. DI 5-0325  
 Ore., Portland—Bearing Sales & Service, 1045 N. W. Hoyt St. CA 3-6301  
 Ore., Portland—J. W. Minder Chain & Gear Co., 307 S. E. Hawthorne Blvd. BE 6-1131  
 Ore., Roseburg—Bearing Sales & Service, 729 S.E. Stephens St. OR 2-2603  
 Utah, Salt Lake City—Bearing Service & Supply Co., 1207 So. Main. IN 6-8776  
 Wash., Aberdeen—Bearing Sales & Service, 317 E. Market St. AB 5820  
 Wash., Everett—Bearing Sales & Service, 2803 Grand Ave. CE 1185  
 Wash., Longview—Bearing Engineering & Supply Co., 1011 15th Ave.  
 Wash., Longview—Bearing Sales & Service, 1131 Commerce Ave. HA 5-1850  
 Wash., Pasco—Bearing Sales & Service Co., 319 W. Clark St. LI 7-2421  
 Wash., Port Angeles—Bearing Sales & Service Co., Valley at Second. GL 2-2307

Wash., Seattle—Bearing Engineering & Supply, 2548 Airport Way at Lander St. MA 2744  
 Wash., Seattle—Bearing Sales & Service, 2908 Sixth Ave. So. MU 2-0331  
 Wash., Seattle—C. M. Lovsted & Co., Inc., 4000 W. Marginal Way. AV 4000  
 Wash., Spokane—Empire Bearing Co., Box 4117, Sta. B. KE 5-2955  
 Wash., Tacoma—Bearing Sales & Service, 1743 Jefferson St. FU 3-5363  
 Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

## COPES-VULCAN DIV., BLOW-KNOX CO., 939 W. 26th St., Erie 4, Pa.

Blowers (soot), Boiler feed water regulator, Controls (combustion, boiler steam temperature), De-superheaters, Governors (pump), Regulators (pressure), Valves (pressure reducing).

### Representatives

Calif., Los Angeles—Franklin Eng. Co., 406 So. Main St.  
 Calif., San Francisco—John Morley, 1001 Tennessee St.  
 Colo., Denver—Hank Thurston Co., 475 Acoma St.  
 Utah, Salt Lake City—C. H. Spencer & Co., 210 W. 33rd So.  
 Wash., Seattle—Pacific Steam Control Co., 4003 Aurora Ave.

## CORNELIUS CO., 550 39th Ave. N. E., Minneapolis 21, Minn.

Air compressors (portable).

### Representatives

Calif., Burbank—General Air Equipment, 824 Hollywood Way. VI 9-4686  
 Calif., Huntington Park—P & B Equipment Co., 1960 E. Slauson Ave. LU 2-8433

## CRANE CO., 836 So. Michigan Ave., Chicago 5, Ill.

Valves (steel, bronze, cast iron), Welding fittings, Steam traps, Pipe, alloy, diaphragm.

### Branch Offices

Ariz., Phoenix—233 So. First Ave. AL 8-6831  
 Ariz., Tucson—35 E. Toole Ave. MA 4-0421  
 Calif., Los Angeles—321 E. Third St. MA 6-4211  
 Calif., Oakland—346 Ninth St. GL 1-5577  
 Calif., Sacramento—1227 Front St. HI 4-7971  
 Calif., Salinas—239 E. Alisal St. HA 4-3964  
 Calif., San Bernardino—777 W. Mill St. TU 8-4455  
 Calif., San Diego—1138 India St. BE 3-8128  
 Calif., Santa Ana—919 Pointsettia St. KI 3-9201  
 Colo., Denver—1631 15th St. KE 4-5111  
 Ida., Pocatello—756 So. First Ave. CE 2-1074, 75  
 Nev., Reno—401 E. Fourth St. FA 2-2151  
 Ore., Portland—710 N.W. 14th Ave. CA 6-3371  
 Utah, Ogden—2001 Wall Ave. EX 4-9493  
 Utah, Provo—237 W. 500 No. FR 3-6962  
 Utah, Salt Lake City—307 W. Second St. EM 3-5801  
 Wash., Seattle—419 Second Ave. So. MA 4-1323  
 Wash., Spokane—No. 207 Crestline Ave. KE 4-0481  
 Wyo., Casper—802 E. "C" St. Phone 2-5321

## CROUSE-HINDS CO., Syracuse 1, N.Y.

Conduit electrical equipment, Floodlights, Aviation lighting, Traffic control.

### Branch Offices

Calif., Los Angeles—510-512 Petroleum Bldg. RI 9-3189  
 Calif., San Francisco—370 Brannan St. GA 1-5267  
 Colo., Denver—1156 Bannock St. TA 5-6639  
 Ore., Portland—212 N. W. 14th Ave. CA 7-2115  
 Utah, Salt Lake City—212 Beason Bldg. EM 3-5513  
 Wash., Seattle—566 Broad St. AT 3-7262

## CULLMAN WHEEL CO., 1344 Altgeld, Chicago 14, Ill.

Sprockets, Roller chain, Flexible couplings.

Branch Office and West Coast Warehouse  
 Calif., Los Angeles—821 S. Santa Fe. MA 7-5176

*See advertisement on page 65*

### Distributors

Ariz., Phoenix—Lee Redman, P.O. Box 151  
 Calif., Los Angeles—B and B Supply Co., Inc., 4849 Telegraph Rd.

Calif., Los Angeles—Bearing Specialty Co., 225 W. 27th St.

Calif., Los Angeles—Conveyor Co., 3260

E. Slauson

Calif., Marysville—Marysville Tractor & Equip., 712 3rd St.

Calif., Maywood—Bearing Specialty Co., 4610 E. Slauson

Calif., Oxnard—Barnes-Duff Co., 1430 S. Oxnard

Calif., Salinas—Seaboard Equip. Co., 14 Murphy St.

Calif., Santa Ana—Santa Ana Chain & Gear Co., 915 E. First St.

Calif., Stockton—Geiger Iron Works, Scott & Pilgrim Sts.

Colo., Denver—Colo. Industrial Supply, 1620 Waze St.

Colo., Denver—Hendrie and Bolthoff, 1635 17th St.

Colo., Pueblo—Motor Supply Co., Box 814

Idaho, Jerome—Bishops, 214 West Ave.

Ore., Portland—Berg Evans Co., 240 S.W. 1st St.

Utah, Ogden—George Goddard Co., 24th and Wall St.

## CURTIS MANUFACTURING CO., 1905 Kienlen Ave., St. Louis 33, Mo.

Air compressors (portable, stationary), Cylinders (air).

### Representatives

Calif., Huntington Park—P & B Equipment Co., 1960 E. Slauson. LU 2-8433

Calif., San Francisco—Paula & Griffin Co., 509 Sixth St.

Colo., Denver—E. J. Witulski, 1270 So. Josephine St. PE 3-6775

Ore., Portland—Oil Filter Service Co., 615 S. E. Market. BE 2-5129

Wash., Seattle—Stoner-Forsyth Co., 1107 E. Pike. EA 4980

## CUTLER-HAMMER, INC., 315 No. 12th St., Milwaukee 1, Wis.

Circuit breakers, Clutches, Control centers, Controls (electric, electric motor), Load centers, Panelboards (electric), Regulators (pressure), Switches (automatic, electric), Transmissions, variable speed.

### Branch Offices

Calif., Fresno—155 Van Ness Ave. AM 8-3301

Calif., Los Angeles—6431 Bandini Blvd. RA 3-3391

Calif., Sacramento—1331 T St. GI 2-2351

Calif., San Francisco—2130 Third St. HE 1-3835

Colo., Denver—126 W. 5th Ave. SH 4-2495

Ore., Ashland—645 Glenwood Dr. MU 2-4721

Ore., Portland—208 S.W. Stark St. CA 7-2405

Utah, Salt Lake City—253 Rio Grande St. DA 8-0233

Wash., Seattle—619 8th Ave. So. MA 4-3515

Wash., Spokane—E. 1717 Thurston Ave. MA 4-9702

## CYCLOTHERM DIV., NATIONAL U. S. RADIATOR CORP., First St., Oswego, N. Y.

### Representatives

Calif., Los Angeles—L. J. Prues & Assoc., 5445 E. Beverly Rd. RA 3-5109

Calif., San Francisco—L. J. Prues & Assoc., 604 Mission St. YU 2-3506

Wash., Seattle—ABC-O-Pacific, 221 Lloyd Bldg. MU 5434

## DAYSTROM-WESTON SALES DIV., DAYSTROM, INC., 614 Frelinghuysen Ave., Newark 12, N.J.

Controls (electric), Instruments (measuring and testing), Regulators (pressure).

### Branch Offices

Calif., Los Angeles—2001 So. Grand Ave. RI 9-2361

Calif., San Francisco—147 Tenth St. UN 3-4250

### Representatives

Ariz., Phoenix—J. E. Redmond Supply Co., 625 W. Madison St. AL 4-8471

Colo., Denver—Peterson Co., 4949 Colorado Blvd. DE 3-5434

Wash., Seattle—Eicher & Co., 5 W. Harrison St. AT 4-1811

## DAYTON RUBBER CO., 2001 Janice Ave., Melrose Park, Ill.

Belts, V (rubber), Belting, drive (rubber).

### Branch Office

Calif., Los Angeles—909 E. Slauson Ave. AD 4-0111

### Representatives

Calif., Bakersfield—Power & Trans. Equip. Co., 109 23rd St.

## DEGEN — DIAMOND CHAIN

Calif., San Francisco—H. N. Cook Belting Co., 401 Howard St.  
Ore., Portland—J. E. Hazeltine Co., 115 S. W. 2nd Ave.  
Utah, Salt Lake City—Six States Distr., Inc., 1555 S. 2nd W.

**DEGEN, L. P., BELTING CO., 260**  
Mission St., San Francisco 5, Calif.  
EX 2-2820

Belting, drive (link), Belting, drive (composition, leather, rubber), Belts (timing), Belts, V (composition, leather, rubber), Hose (air, flexible metalic, hydraulic), Pulleys, Sheaves.

**DELCO PRODUCTS DIV., GENERAL MOTORS CORP., 329 E. First St., Dayton 7, Ohio**

Gearmotors, Generators (electric) Motors (electric poly-phase a-c, electric single-phase a-c.)

### Branch Offices

Calif., Los Angeles—2030 E. 15th St. RI 9-7851, 52  
Calif., Oakland—1250 53rd St. OL 5-5731, 32

### Representatives

Ariz., Phoenix—Daley Electric Co., 1825 E. Jefferson

Ariz., Phoenix—O'Connell Brothers, Inc., 505 N. Central Ave.

Ariz., Phoenix—Vinson-Carter Electric Co., 4444 E. Washington

Ariz., Prescott—Electric Motor Industries, 1102 Willow Creek Rd.

Ariz., Tucson—Electric Motor Co., 1028 E. Broadway

Ariz., Yuma—Jongeward Electric Motors, 709 8th St.

Calif., Artesia—Techno Electric Co., 12408 E. Carson Blvd.

Calif., Bakersfield—Electropower, Inc., 3901 Pierce Rd.

Calif., Berkeley—Del Mar Electric Co., 1659 San Pablo Ave.

Calif., Brawley—Moyle Electric Co., 1133 N. 8th St. P.O. Box 201

Calif., Campbell—Harry Shoot Electric Motors, 125 S. Union St.

Calif., Chico—Fullers Electric Shop, 8th and Nord Ave.

Calif., Chowchilla—Vans Motor Shop, 24727 Robertson Blvd., P.O. Box 324

Calif., Corcoran—Quality Motor Shop, 620 Otis St.

Calif., El Centro—R. A. Reed Electric Co., 1300 N. Imperial, P.O. Box 774

Calif., Escondido—Webb Brothers, 252 W. Grand Ave.

Calif., Eureka—Senn Electric, 1801 Fairfield St.

Calif., Fresno—Arrow Electric Motor Service, 645 Broadway

Calif., Fresno—Blackstone Electric Motor Shop, 1251 Blackstone Ave.

Calif., Gilroy—Aer Electric, 70 S. Railroad St.

Calif., Lodi—Gundershaug Electric Co., 130 N. Sacramento St.

Calif., Long Beach—Phillips Electric Motor Service, 1381 Obispo Ave.

Calif., Long Beach—Delta Electric Motor Co., 2224 Atlanta Ave.

Calif., Los Angeles—AAA Electric Motor Service, 1346 Venice Blvd.

Calif., Los Angeles—Electrical Appliance Service Corp., 1441 E. Washington Blvd.

Calif., Los Angeles—Hill Electric Co., Inc., 580 Mateo St.

Calif., Los Angeles—Hoyt and Sweet, 1132 E. 12th St.

Calif., Los Angeles—Larsen-Hogue Electric Co., 11510 S. Alameda St.

Calif., Los Angeles—Smalcomb Electric Co., 1120 S. Main St.

Calif., Los Angeles—United Service & Supply, 2001 S. Figuera St.

Calif., Marysville—Kinney Electric, 818 5th St.

Calif., Merced—Don's Electric Motor Shop, 843 W. 17th St.

Calif., Modesto—Stanislaus Electric Motor Works, 504 West River Rd.

Calif., Monrovia—Maxwell Industries, 226 E. Huntington Dr.

Calif., Oakland—Benkiser Electric Motors, 10215 San Leandro St.

Calif., Oakland—United Electric Motor Co., 1225 - 10th Ave.

Calif., Oceanside—The Electric Motor Service Co., 515 Michigan Ave.

Calif., Oroville—Oroville Pump & Electric Co., P.O. Box 271

Calif., Oxnard—B and B Electric, 761 S. Oxnard Blvd.

Calif., Pasadena—Pompey Electric Motor Service, 25 E. Union St.

Calif., Petaluma—Electrical Equipment Co., 1108 Redwood Highway N.

Calif., Pomona—Larson-Houge Electric Co., Pomona Div., 575 South East End Ave., P.O. Box 518

Calif., Red Bluff—Red Bluff Industrial Electric, 345 Ash St.  
Calif., Redding—Redding Industrial Electric, Highway 99 South  
Calif., Redwood City—Coast Electric Motor Shop, 1783 Broadway  
Calif., Sacramento—Van Alstyne and Son Electric, 2512 Broadway  
Calif., Salinas—Salinas Armature & Motor Works, 321 N. Main St., P.O. Box 1226  
Calif., San Bernardino—Van Slyke Wholesale Electric, 280 South Arrowhead  
Calif., San Diego—Bay City Electric Works, 3231 India St.  
Calif., San Diego—California Electric Works, 424 8th Ave.

Calif., San Fernando—H. C. Stroud Electrical Motor Service, 1811 1st St.

Calif., San Francisco—Electrical Appliance Service Co., 1434 Howard St.

Calif., San Francisco—Quality Electric Co., Inc., 1051 Howard St.

Calif., San Francisco—R & M Electric Motor Service, 173-17th St.

Calif., San Gabriel—San Gabriel Valley Electric Co., 1846 S. San Gabriel Blvd.

Calif., San Jose—San Jose Armature and Motor Works, 1002 2nd St.

Calif., San Luis Obispo—Baxendale Electric, 3035 S. Broad St.

Calif., San Mateo—Arrow Electric Co., 715 B St.

Calif., San Rafael—Ideal Motor Service, 608 Lindard St.

Calif., Santa Ana—Alexander-Williams Co., 515 N. Ross St.

Calif., Santa Ana—Santa Ana Electric Motor Service, 1212 W. First St.

Calif., Santa Barbara—Electric Service Co., 520 E. Haley St.

Calif., Santa Cruz—State Electric Motor Co., 120 Union Street

Calif., Santa Maria—Lahr Electric Motors, 117 W. Chapel St.

Calif., Santa Monica—Electra Service Co., 3225 Pico Blvd.

Calif., Santa Rosa—Leete Electric Motor Co., 930 Santa Rosa Ave.

Calif., Seaside—Hamilton's Electric Motor Service, 1238 Fremont Blvd.

Calif., Stockton—Stanley Electric Motor Co., 1520 E. Miner Ave.

Calif., Torrance—M & W Electric Motor Service, 1730 W. Carson Avenue

Calif., Tracy—Hart Electric Co., 243 E. Highland

Calif., Tuleare—Turnupseed Electric Service, Inc., 340 E. Inyo St.

Calif., Ukiah—Star Delta Motors, 555 Talman Rd.

Calif., Van Nuys—Walmac Electric Motor Service, 5525 Kester Ave.

Calif., Visalia—Langdon Electric Motor and Pump Co., 410 E. Main St.

Calif., Watsonville—P and H Electric Motor Works, 215 San Juan Rd.

Colo., Colorado Springs—Electric Motor Co., Inc., 735 E. Pikes Peak

Colo., Denver—Armor Electric Co., 1414 Speer Blvd.

Colo., Denver—Tree Electric Service, Inc., 1226 Larimer St.

Colo., Denver—United Electric Motor Services and Supply Co., 4500 Jackson St.

Colo., Denver—Weaver Electric Co., 1721 Larimer St.

Colo., Denver—All-States Electric Co., 3345 Larimer St.

Colo., Durango—Rocky Mountain Electric Service, 701 2nd Ave.

Colo., Glenwood Springs—Mountain Electric & Refrigeration Co., 725 Grand Ave.

Colo., Grand Junction—Bearings & Power Transmission Co., 761 So. 7th

Colo., Greeley—Harrington Electrical Works, 521 8th St.

Colo., Pueblo—Johnson Electric Co., 324 S. Union

Colo., Sterling—Register Electric, 215 N. Front

Utah, Ogden—Electric Motors Inc., 249 Washington Blvd.

Utah, Salt Lake City—H & M Electric Motor Service, 1325 Major St.

**DELTA-STAR ELECTRIC DIV., H. K. PORTER CO., INC., 2437 Fulton St., Chicago 12, Ill.**

Ducts, Substations, Switches, Switchgear equipment, Transformers.

### Branch Offices

Calif., Los Angeles—Broadway Arcade Bldg., MA 6-5651, 2

Wash., Seattle—1904 Third Ave. MA 4-3726

### Representatives

Ariz., Phoenix—Daley Electric Sales Co., Inc., 1825 El Jefferson St. AL 2-2326

Calif., San Francisco—C. E. Ingalls & Sons, 681 Market St. GA 1-2016

Colo., Denver—Mountain States Machinery Co., 1526 Blake St. CH 4-7421, -22  
Utah, Salt Lake City—John E. Elggren, P.O. Box 388, EM 3-3945, -46

**DENISON ENGINEERING DIV., AMERICAN BRAKE SHOE CO., 1160 Dublin Rd., Columbus 16, Ohio.**

Controls (hydraulic), Cylinders (hydraulic), Fluid Drives, Motors (hydraulic), Pumps (hydraulic power), Transmission, variable speed, Valves (hydraulic power line).

*See advertisement on page 24*

### Branch Offices

Calif., Hawthorne—1651 E. El Segundo Blvd. PL 7-2246

**DETROIT DIESEL ENGINE DIV., GENERAL MOTORS CORP., 13400 W. Outer Dr., Detroit 28, Mich. KE 1-7100**

General Motors diesel engines, ranging from 20 to 1650 hp. in three cylinder sizes.

### Branch Office

Calif., San Francisco—1426 Russ Bldg. EX 7-0273

### Distributors

Ariz., Phoenix—Diesel Service Co., 2808 No. 27th Ave. AP 8-6286

Calif., Berkeley—Williams & Lane, Inc., 1077 Eastshore Hwy. LA 6-0521

Calif., Los Angeles—Anderson-O'Brien Co., 746 E. Washington Blvd. RI 9-7795

Calif., San Diego—Crofton Diesel Engine Co., Inc., G St. Pier. BE 2-7311

Colo., Denver—Dobbs GM Diesel, Inc., 5901 Colorado Blvd. AT 8-6668

Mont., Billings—Holeman GM Diesel, Inc., 827 Second Ave. No. Phone 2-4191

Nev., Reno—Sierra Machinery Co., 307 Morrell Ave. FA 3-1301

N. Mex., Albuquerque—Southwest Engine Co., Inc., 1716 Second St. N.W. CH 7-1527

Ore., Portland—Gunderson Bros. Engineering, 225 N.W. 14th. CA 3-8171

Utah, Salt Lake City—Cate Equipment Co., Inc., 1132 So. Fourth W. St. EL 9-2021

Wash., Seattle—Modern Motors, Inc., 4300 11th Ave. N.W. SU 3-9000

Wash., Spokane—Intermountain Equipment, 611 E. Sprague. TE 8-2521

**DETROIT STOKER CO., 1510 E. First St., Monroe, Mich.**

### Stokers.

### Representatives

Calif., San Francisco—C. C. Moore & Co., Engr. 450 Mission St. GA 1-3484

Colo., Denver—Hendrie & Bolthoff Co., 1635 17th St. KE 4-4111

Ore., Portland—C. C. Moore & Co. Engr. 1120 Falling Bldg. CA 8-9684

Utah, Salt Lake City—North-Monsen Co., 535 So. Second W. St. DA 2-1343

Wash., Seattle—C. C. Moore & Co. Engr. 417 Smith Tower. MA 1496

**DE VILBISS CO., 300 Phillips Ave., Toledo 1, Ohio**

Air compressors (portable, stationary), Hose (air), Regulators (pressure).

### Branch Offices

Calif., Los Angeles—6811 E. Slauson Ave. RA 3-6307

Calif., San Jose—1335 N. Tenth St. CY 7-1820

**DIAMOND CHAIN CO., INC., 402 Kentucky Ave., Indianapolis 7, Ind.**

Chains for drives (detachable link, roller), Couplings (shaft), Sprockets.

### Branch Offices

Calif., Los Angeles—900 Santa Fe Ave. MA 2-1723

Calif., Menlo Park (San Francisco)—595 Santa Cruz. DA 3-4940

### Representatives

Ariz., Flagstaff—Semon Industrial & Welding Supply Co., 27 Mikens Pike

Ariz., Phoenix—Semon Bearing & Supply, 325 No. 3rd Ave. AL 8-7566

Ariz., Tucson—Tucson Bearing Co., Inc., 527 No. Stone Ave. Phone 3-3618

Calif., Arcata—Reliable Hardware Co., Inc., 11th & M Sts. VA 2-0378

Calif., Bakersfield—Power Transmission Equipment, 100 Twenty-third. Phone 5-8601

Calif., Fresno—Pacific Mill & Mine Supply, 530 Van Ness Ave. Phone 4-5924

Calif., Los Angeles—Degen Fiege, 4559 E. Sheila St. RI 8-2281

## DICK, R & J—DURKEE-ATWOOD

Calif., Los Angeles (South Gate)—Power Transmission Equipment, 4501 Firestone. LO 4-2351

Calif., Sacramento—Western Industrial Supply Co., 905 G St. GI 2-7264

Calif., San Francisco—Horsford Bros., 944 Folsom St. SU 1-0657

Calif., San Francisco—Monarch Corp. (Supply Div.), 55 New Montgomery. GA 1-7724

Calif., San Leandro—Monarch Corp. (Supply Div.), 2075 Williams. SW 8-0980

Calif., Santa Clara—Monarch Corp. (Supply Div.), 2455 The Alameda. AX 6-1025

Calif., Stockton—Hickinbotham Bros., Ltd., 536 So. Aurora. HO 6-9541

Colo., Denver—Colorado Bearing Co., 1618 Wazee St. MA 3-1218

Ida., Boise—M. R. Priest & Sons, Inc., 515 Highland St. Phone 4-3519

Ida., Pocatello—Plumbing & Industrial Supply, Inc., 1921 No. Harrison. CE 3-0041

Mont., Billings—Great Northern Tool & Supply Co., 2224 Minnesota Ave.

Mont., Billings—Power Transmission Equipment Co., P.O. Box 988. Phone 4-4185

Mont., Cutbank—Great Northern Tool & Supply Co.

Mont., Kevin—Great Northern Tool & Supply Co.

N. Mex., Albuquerque—Harry Cornelius Co., 1510 Second St. N.W. Phone 3-1776

Ore., Brookings—Reliable Hardware Co., Inc., 234 Wharf St. Phone 2781

Ore., Eugene—Bearing Sales & Service, Inc., 225 7th Ave. W. DI 5-0325

Ore., Portland—Bearing Sales & Service Inc., 1645 N.W. Hoyt St. CA 3-6301

Ore., Portland—Woodbury & Co., 5851 No. Lagoon. CA 8-6641

Ore., Roseburg—Bearing Sales & Service, Inc., 460 N.E. Garden Valley Rd.

Utah, Salt Lake City—Utah Sprocket & Machinery Co., 717 So. 4th W. EL 5-8811

Wash., Aberdeen—Mill & Logging Supply Co., 313 So. H St.

Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave. CE 3111

Wash., Longview—Bearing Sales & Service, 743 Commerce Ave. HA 5-1850

Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St. LI 7-2421

Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. EL 5650

Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St. MA 8158

Wash., Walla Walla—White Bros. Co., 304 Mullan Ave. JA 5-6620

Wyo., Casper—Great Northern Tool & Supply Co., 333 W. Midwest Ave.

Wyo., Casper—Power Services, Inc., 355 So. Ash St.

**DICK, R & J, CO., INC.**, Minnisink Rd. & Furier St., Totowa, N.J.

Bearings (ball, babbitt), Belting (Balata, link, cord, timing), Belts, V, Chains (roller), Collars (shaft), Couplings (shaft), Pulleys (solid, split, self-cleaning), Sheaves (V drives), Sprockets (roller chain steel types ABC and QD).

See advertisement on page 5

### Branch Offices

Calif., Los Angeles—5276 Atlantic Blvd. LU 8-4014

Calif., San Francisco—510 Bryant St. SU 1-1341

Ore., Portland—716 N.E. Third Ave. BE 4-6251

Wash., Seattle—307 Maritime Bldg. MU 2-1922

### Representatives

(Contact Los Angeles, San Francisco, Portland or Seattle branches for any information.)

**DIEHL MANUFACTURING CO.**, 1209 Finderne Ave., Somerville, N. J.

Fans, Electric Motors (fractional and integral hp.).

### Branch Office

Calif., Los Angeles—808 So. Broadway. MA 2-3542

### Representatives

Calif., Los Angeles—Hayjax Co., 436 Colyton St. MU 6279

Calif., San Francisco—Keeler, White Co., 615 Seventh St. HE 1-2900

Colo., Denver—Spicer-Lindsay Assoc., 4960 E. Evans Ave. SK 6-0627

Ore., Portland—Keeler, White Portland, 322 N.W. 4th Ave. CA 7-0593

Wash., Seattle—Keeler, White Inc., 1041 Sixth Ave. So. EL 2367

**DINGS MAGNETIC SEPARATOR CO.**, 4740 W. Electric Ave., Milwaukee 46, Wis.

### Magnetic pulleys, Magnetic separators.

#### Representatives

Calif., Los Angeles—A. W. Nash Co., 2112 S. Atlantic Blvd. AN 9-7304

Calif., San Francisco—Samson Sales Co., 420 Market St. EX 2-7070

Ore., Portland—Joseph Taraba Co., P. O. Box 5232. BE 4-6491, 2

### DODGE MANUFACTURING CORP.

500 So. Union St., Mishawaka, Ind.

Power transmission machinery (bearings, clutches, couplings, V-belt drives, chain drives, dry fluid drives, pulleys, speed reducers, sprockets, sheaves), Collars (shaft), Pillow blocks.

See advertisement on page 66

### Branch Offices

Calif., Rivera—R. C. Kingsbury, 7744 So. Industry Avenue. RA 3-8621

Calif., San Francisco—55 New Montgomery. DO 2-8434

### Representatives

Colo., Denver—Donald Leckey, 1483 So. Euclid. SK 6-5347

Ore., Oswego—Marion Studebaker, 1011 Bayberry Rd. NE 6-5081

**DOERR ELECTRIC CORP.**, 510 No. Fourth Ave., Cedarburg, Wis.

Electric motors, Gearmotors.

### Representatives

Calif., Alhambra—Cox Sales & Engineering, 1819 W. Valley Blvd. CU 3-2351

Calif., San Francisco—Monarch Corp., Russ Bldg. GA 1-7724

Calif., San Leandro—Monarch Corp., 2075 Williams St. SW 8-0980

Ore., Portland—Donal Co., P.O. Box 7013. CA 6-3131

Wash., Seattle—Caskey Engineering, 2200 First Ave. So. MA 4073

**DURAMETALLIC CORP.**, Factory St., Kalamazoo, Mich.

Flexible metallic packings, mechanical seals.

### Branch Office

Calif., Los Angeles—3935 E. Olympic Blvd. AN 1-3165

### Representatives

Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St. EX 2-6963

Colo., Denver—Edward F. Taylor Co., 1237 Shoshone St. TA 5-1327

Ore., Portland—Misco Service, Inc., 5924 No. Lagoon Ave., Swan Island. BU 5-6996

Utah, Salt Lake City—Bullough Asbestos Supply Co., 764 W. Second So. St. Phone 5-8463

Wash., Seattle—Marine & Industrial Supply Corp., 1123 W. Hanford St. MA 4-6262

**GEO. P. DORRIS CO., INC.**, 750 No. Skinker Blvd., St. Louis 30, Mo.

Shaft mounted speed reducers, Base type helical gear speed reducers, Screw conveyor drives.

### Representatives

Calif., Los Angeles—BB Supply Co., 4849 Telegraph Rd. AN 8-3495

Calif., So. San Francisco—Adam-Hill Co., 142 Utah Ave. JU 8-8755

**DRESSER INDUSTRIES**, see ROOTS-CONNERSVILLE BLOWER DIV.

**DUKES CO., INC.**, 3999 No. 25th Ave., Schiller Park, Ill.

Hydraulic cylinders, Pneumatic cylinders, Hydraulic valves.

### Representatives

Calif., Bell Gardens—Paul-Munroe Co., 6430 E. Gage Ave. SP 3-2870

Calif., San Francisco—Power-Mac Corp., 467 So. Van Ness. UN 1-1430

Colo., Denver—Landes, Zachary & Peterson Co., 601 So. Jason St. SH 4-1311

N. Mex., Albuquerque—Landes, Zachary & Peterson Co., 5900 Domingo Rd. N. E. AL 6-9449

Ore., Portland—Hydraulic & Air Equipment Co., 2316 N. W. Savier St. CA 2-3295

Utah, Salt Lake City—Landes, Zachary & Peterson Co., 2501 So. State. HU 7-7873

Wash., Seattle—Hydraulic & Air Equipment Co., 2450 Sixth Ave. So. MU 2-1681

**DURANT MFG. CO.**, 1900 N. Buffum St., Milwaukee 1, Wis.

Industrial counters, Instrument counters for digital read-out.

### Representatives

Calif., Los Angeles—Hollis Jewell Co., 5422 W. Washington Blvd. WE 3-7259

Calif., San Francisco—Transmission En-

gineer, 427 Bryant St. SU 1-4738

Colo., Englewood—Vinson Assoc., 206 Tucker Bidg. SU 9-2851

Ore., Portland—James L. Kearns Co., 6055 N.E. Glisan. BE 6-2444

**DURKEE-ATWOOD CO.**, 215 N.E. 7th St., Minneapolis 13, Minn.

V belts, Sheaves, Belting, Pulleys.

### Branch Offices

Calif., Los Angeles—5738 Holmes Ave. LU 8-5295

Calif., Oakland—2201 West St. TE 2-3818

Calif., Sacramento—2632 Rochon Way. GL 5-2247

### Representatives

Ariz., Phoenix—Edward D. Maltby Co., 424 W. Jefferson

Calif., Berkeley—Berkeley Industrial Supply 1003-5 Pardee St.

Calif., Burbank—Brand Tool & Supply Co., 907 So. Victory

Calif., Chico—Lassen Pump & Motor Works, W. 8th & Cherry Sts.

Calif., Eureka—Bearing Transmission Products, 2930 Broadway

Calif., Fresno—Central Supply Co., 424 M St.

Calif., Huntington Park—Mechanical Drives Co., 3400 Pacific Blvd.

Calif., Lennox—Lennox Appliance Service.

Calif., Lodi—Gundershaug Electric Co., 130 No. Sacramento St.

Calif., Los Angeles—Acme Industrial Supply Co., 6213 Avalon.

Calif., Los Angeles—B-B Supply Co., 4849 Telegraph Rd.

Calif., Los Angeles—Degen Fiege, 4559 Sheila

Calif., Los Angeles—Hendrie Belting & Rubber Co., 405 Towne Ave.

Calif., Los Angeles—E. D. Maltby Co., 1718 So. Flower St.

Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa.

Calif., Los Angeles—J. W. Minder Chain & Gear, 6011 So. Central Ave.

Calif., Los Angeles—Bill Pensal, 7019 So. Western.

Calif., Los Angeles—Utilities Supply Co., 2852 Supply Ave.

Calif., Los Angeles—Victor Belting & Rubber Co., 2316 E. 38th St.

Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St.

Calif., Modesto—Girardi Bearing Co.

Calif., Montebello—Mercury Industrial Hdwe. Co., 11203 E. Garvey Blvd.

Calif., Montebello—Metropolitan Supply Co., 1153 So. Greenwood

Calif., No. Hollywood—General Industrial Tool & Supply, 12517 Sherman Way

Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.

Calif., Oakland—Bearing Specialty Co., 2424 Webster St.

Calif., Oakland—Cypress Steel & Equipment Co., 1829 Cypress St.

Calif., Oakland—Otrich Co., 3664 Grand

Calif., Oakland—Viking Supply, 4545 Oakport St.

Calif., Oakland—Wm. Wurzbach, 1951 E. 14th St.

Calif., Oakland—Yates Service Co., 336 E. Eighth St.

Calif., Rio Vista—Oilwells Materials

Calif., Sacramento—Western Industrial Supply, 905 G St.

Calif., San Bernardino—Reliable Bearing Co., 263 So. E St.

Calif., San Diego—Edward D. Maltby Co., 745 15th St.

Calif., San Francisco—Bearing Specialty Co., 128 Texas St.

Calif., So. San Francisco—Adam Hill Co., 142 Utah

Calif., San Francisco—Ralphs-Pugh Co., 530 Howard St.

Calif., San Francisco—Setrakian & Co., 601 Montgomery St.

Calif., San Francisco—Yosemite Equipment, 274 Hyde St.

Calif., San Leandro—Monarch Corp., 2075 William St.

Calif., Santa Barbara—Lloyd J. Bohan, 1245 E. Coast Hwy.

Calif., Santa Clara—Whitney Industrial Drives, 2311 Lafayette St.

Calif., South Gate—Power Transmission Co., 4501 Firestone.

Calif., Stockton—Bearing Co., 505 So. Wilson Way

Ida., Boise—M. R. Priest & Sons, Inc., 525 Hyland St.

Nev., Fallon—Motor Supply Co., P.O. Box 712

Nev., Reno—Reliable Hdwe. & Steel, 1145 Petaluma Hill Rd.

Nev., Reno—Sanford Tractor Co., No. Valley Rd.

Nev., Reno—Sierra Industrial, 307 Morrill Ave.  
Ore., Portland—Berg-Evans Chain Co., 240 S.W. First Ave.  
Utah, Salt Lake City—Schieren-Jarvis Co., 320 Dooly Bldg.  
Wash., Seattle—Bearing Engr. & Supply Co., 2548 Airport Way  
Wash., Seattle—Berg-Evans Chain Co., 2221 Fourth Ave. So.  
Wash., Tacoma—Charles D. West & Co., 3000 So. Prospect St.

**EASTMAN MFG. CO.**, 1440 N. 24th St., Manitowoc, Wis.  
**Fittings and couplings (hydraulic), Hose (hydraulic).**  
*Representatives*  
Calif., Los Angeles—Eastman Pacific Co., 5240 Alhambra Ave.  
Ore., Portland—Ray Bobbs Air-Draulic Inc., 218 S. E. 12th Ave.

**EDISON, THOMAS A., INDUSTRIES, McGRAW - EDISON CO.**, Storage Battery Div., W. Orange, N.J.  
Industrial storage batteries.

*Branch Offices*  
Calif., Pasadena—15 No. Euclid, Room 217. MU 1-4339  
Calif., San Francisco—1174 Howard St. HE 1-0322  
Wash., Seattle—310 Ninth Ave. No. MA 2-1988

**ELECTRA MOTORS, INC.**, 1110 N. Lemon, Anaheim, Calif. KE 5-6061  
Electric motors, Electric gearmotors, Speed reducers.

*Branch Office*  
Wash., Seattle—1016 First Ave. So. EL 5006  
*Representatives*  
Ariz., Phoenix—Floyd O. Davis, 2326 E. Henshaw, BX 5-2340  
Calif., San Francisco—McCarthy Hood Assoc., 1485 Bayshore, JU 6-1860  
Colo., Denver—Hubert Kaub & Co., 1025 Santa Fe, MA 3-4606  
Ore., Portland—Jos. F. Taraba Co., 1824 S.E. 50th Ave. BE 4-6491  
Utah, Salt Lake City—Electrical Sales Co., Box 49, Sugarhouse Sta. HU 5-0531

**ELECTRIC MACHINERY MFG. CO.**, 800 Central Ave., Minneapolis 13, Minn.

Electric power apparatus (a-c. motors, induction and synchronous), A-c. generators (engine driven, steam turbine driven, waterwheel driven), Motor-generator sets (power frequencies, high frequency), Motor control, Generator switchgear, Generator voltage regulators, Adjustable speed magnetic drives.

*Branch Offices*  
Ariz., Phoenix—P. O. Drawer 869. AL 4-8471  
Calif., Los Angeles—P. O. Box 58213. LU 3-1781  
Calif., San Francisco—420 Market St. EX 2-8296  
Colo., Denver—1644 Blake St. AC 2-3515  
Mont., Butte—829 Maryland Ave. Phone 2-5447  
Ore., Portland—1233 N. W. 12th Ave. CA 3-7349  
Utah, Salt Lake City—550 W. Seventh St. EL 5-5378  
Wash., Seattle—2603 Western Ave. MU 4950  
Wash., Spokane—E. 706 Sprague Ave. TE 8-8276

**ELECTRIC STORAGE BATTERY CO.**, see EXIDE INDUSTRIAL DIV.

**ELECTRIC STORAGE BATTERY CO., THE**, 40 So. 15th St., Philadelphia 2, Pa.

Exide-Ironclad, Exide-Manchex, and Exide-Tytex batteries, Exide lightguards, Emergency lighting systems.

*Branch Offices*  
Ariz., Phoenix—Room 204, 916 W. Adams St. AL 4-0851  
Calif., Los Angeles—1043 So. Grand Ave. RI 9-4436  
Calif., San Francisco—6150 Third St. MI 7-3100  
Colo., Denver—234 Commonwealth Bldg. MA 3-7793  
Ore., Portland—224 S. W. Morrison St. CA 2-3778  
Wash., Seattle—500 Wall St. MA 3-1377  
Wash., Spokane—617 Paulsen Bldg. MA 4-1295

**ELECTRO-MECHANO CO.**, 241 E. Erie St., Milwaukee 2, Wis.  
**Electric tachometers, Air hydraulic cylinders.**  
*Representatives*  
Calif., Los Angeles—Instrument Laboratory, 1836 W. Florence Ave. (tachometers)  
Calif., Los Angeles—Marshall Tool & Supply Co., 2850 E. Olympic Blvd.

**ELECTRO PRODUCTS LABORATORIES, INC.**, 4501 No. Ravenswood, Ave., Chicago 40, Ill.  
**Proximity switches for metal sensing and controls.**

*Representatives*  
Calif., Los Angeles—King Eng. Co., 5321½ Hollywood Blvd. HO 4-7166  
Calif., San Francisco—King Eng. Co., 1878 Union, WE 1-2168  
Colo., Denver—Hyde Electronics Assoc., 888 So. Lipan St. WE 6-3456  
N. Mex., Albuquerque—Hyde Electronics Assoc., 5206 Constitution Ave., AM 8-1111  
Utah, Salt Lake City—Hyde Electronics Assoc., 2803 Conner St. IN 7-5763

**ELLIOTT MFG. CO.**, 350 State St., Binghamton, N.Y.

**Flexible shafting for power transmission.**  
*Representatives*

Calif., Los Angeles—Industrial Product Sales Co., 1417 Georgia St. RI 7-0125  
Calif., San Francisco—Milligan-Spika Co., 1485 Bayshore. JU 5-8153

**ENTERPRISE ENGINE & MACHINERY CO.**, 18th & Florida Sts., San Francisco 10, Calif. MI 7-0862

**Engines (diesel, dual fuel, gas).**

*Branch Offices*  
Calif., Long Beach—3020 Stevely Ave. HA 1-2203  
Wash., Seattle—2534 Westlake Ave. No. AT 3-1976

**ERICO PRODUCTS, INC.**, 2070 E. 61st Pl., Cleveland 3, Ohio.

**Cadwell electrical connections (copper to copper, copper to steel, aluminum to aluminum, aluminum to copper).**

*Branch Office*  
Calif., Los Angeles—8839 Miner St. LU 1-9922

*Representatives*  
Calif., San Francisco—Pacific Utilities Supply Co., 605 Third St. YU 6-1625  
Colo., Denver—Landes, Zachary & Peterson, 275 Kalatham St. MA 3-6203  
Wash., Seattle—Cascade Distributors, 1918 First Ave. So. SE 5625

**EXIDE INDUSTRIAL DIV., ELECTRIC STORAGE BATTERY CO.**, Rising Sun & Adams Ave., Philadelphia 20, Pa.  
Storage batteries, Portable emergency lighting, Chargers, Rectifiers.

*Representatives*  
Ariz., Phoenix—Room 204, 916 W. Adams St. AL 4-0851  
Calif., Los Angeles—1043 S. Grand Ave. RI 9-4436  
Calif., San Francisco—6150 Third St. MI 7-3100

Colo., Denver—234 Commonwealth Bldg. MA 3-7793

Ore., Portland—1224 S.W. Morrison St. CA 2-3778

Utah, Salt Lake City—P. O. Box 133, Murray Branch. EL 9-5766

Wash., Seattle—500 Wall St. MA 3-1377  
Wash., Spokane—617 Paulsen Bldg. MA 4-1295

**EXTREMULTUS, INC.**, 25-11 40th Ave., Long Island City 1, N.Y.

**Flat power transmission belting.**

*Branch*  
Calif., Pacific Grove—P.O. Box 95.

*Representatives*

Calif., Eureka—Fred E. Barnett Co., Broadway & Harris, HI 2-3791

Calif., Los Angeles—Western Belting, 3525 Emery, AN 1-7117

Calif., Sacramento—Fred E. Barnett Co., 999 Arden Way, WA 2-5621

Calif., San Leandro—Monarch Supply Co., 2075 Williams St. SW 8-0980

Calif., Utkiah—Fred E. Barnett Co., Hwy. 101 No. HO 2-5747

Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AM 6-2292

Ore., Portland—Breezee Supply, 237 S.W. Front. CA 7-5447

## EASTMAN—FENWAL, INC.

Utah, Salt Lake City—Mountain States Rubber, 121-235 Social Hall Ave. EM 3-6727  
Wash., Seattle—Washington Belting, 2763 First Ave. So. MA 3-5650  
Wash., Spokane—Bitco, Inc., E. 4115 Trent Ave. KE 5-1611

**FAFNIR BEARING CO., THE**, 37 Booth St., New Britain, Conn.  
Bearings (ball).  
*Branch Offices*

Calif., Los Angeles—276 E. 16th. LU 1-6171  
Calif., Millbrae—20 Rollins Rd. OX 7-1244

Colo., Denver—4425 Vine St. AL 5-1495  
Ore., Portland—1202 N.W. 17th Ave. CA 7-0147

Wash., Seattle—605 Spokane St. MA 4141

**FAIRCHILD ENGINE & AIRPLANE CO.**, see STRATOS DIV.

**FAIRBANKS, MORSE & CO.**, 600 So. Michigan Ave., Chicago 5, Ill.

**Engines (gas, diesel), Gearmotors, Generators (electric, gasoline, diesel), Motors (electric, DC, electric, poly-phase and single-phase AC, variable speed), Pumps (turbine, centrifugal).**

*See advertisement on page 61*

*Branch Offices*  
Calif., Fresno—2379 So. G St. AM 6-8644  
Calif., Los Angeles—4535 So. Soto St. LU 7-8151

Calif., San Francisco—630 Third St. EX 2-5855

Colo., Denver—4995 Colorado Blvd. FR 7-8845

Ore., Portland—105 S.E. Taylor St. BE 2-0131

Utah, Salt Lake City—153 W. 2nd South St. EM 3-2108

Wash., Seattle—668 Lane St. MU 3450

**FALK CORP., THE**, Box 492, Milwaukee 1, Wis.

**Motoreducers, Shaft mounted drives, Speed reducers, Couplings (shaft, flexible), High speed drives, Special gear drives, Single helical and herringbone gears, Marine propulsion drives, Castings (steel), Weldments, Flange mounted drives, Screw conveyor drives.**

*See advertisement on page 21*

*Branch Offices*  
Calif., Los Angeles—1068 So. Vail Ave. RA 3-8468

Colo., Denver—655 Broadway Bldg. AC 2-4707

*Representatives*

Calif., San Francisco—Transmission Engineering Co., 427 Bryant St. SU 1-4738

Ore., Portland—Western Machinery Corp., 1035 S.E. 9th Ave. BE 6-4117

Wash., Seattle—A. T. Harris Co., 1500 West Lake No. AL 8460

**FEDERAL PACIFIC ELECTRIC CO.**, 50 Paris St., Newark 1, N.J.

**Electrical switchgear, Circuit breakers, Unit substations, Transformers, Motor control, Instruments, Relays, Bus duct, Panel and switchboards, Bus fittings, Power connectors.**

*Branch Offices*  
Calif., Los Angeles—3333 San Fernando Rd. CL 4-8211

Calif., Santa Clara—

Ore., Oswego—338 N. State St. NE 6-4573

Wash., Seattle—1415 Elliott Ave. W. AL 3-7801

Wash., Spokane—W. 1207 College Ave. FA 7-1957

*Representatives*

Ariz., Phoenix—Electrical Engineering & Sales Corp., 106 E. Pierce. AL 3-0927

Ariz., Phoenix—F. W. Gorman, Inc., 2241 E. Glenrosa

Colo., Denver—R. D. Florance & Assoc., 2052 Humboldt St. AC 2-1373

Colo., Denver—Hamilton Assoc., 1236 Elati St. CH 4-1505

Ida., Boise—Myron Swendsen, P.O. Box 156. BO 4-4971

N. Mex., Albuquerque—F. W. Gorman, Inc., 1330 No. 12th St. CH 7-1596

Utah, Salt Lake City—James D. Stephens Co., 49 No. Second W. St. EL 5-3540

**FENWAL, INC.**, Pleasant St., Ashland, Mass.

**Temperature controls of all types.**

*Branch Office*

Calif., Los Angeles—111 So. Burlington Ave. DU 8-3168

*Representatives*

## FIRCO, INC.—FURNAS

Calif., San Francisco—Bellilove Co., 420 Market St. TR 5-7244  
Colo., Denver—E & M Equipment Co., 2415 15th St. GL 5-3651  
Wash., Seattle—J. C. McDougall Co., 520 First Ave. So. MA 7667

**FIRCO, INC.**, see REMCO MFG. CO., a div.

**FISCHER & PORTER CO.**, 580 Warminster Rd., Hatboro, Pa.

Millisecond operation recorder, Digital demand recorder, Complete power plant instrumentation, Water treatment equipment (chlorinators)

*Branch Offices*  
Calif., Los Angeles—130 Orangethorpe Way, LA 6-7741  
Calif., San Francisco—5010 Woodminster Lane, AN 1-8704  
Wash., Seattle—1000 4th Ave. MU 2-4442

*Representatives*  
Ariz., Tucson—Central Sta. Equip. Co., 2323 Aviation Ave. TU 3-2493  
Colo., Denver—J. M. Bush, 1737 Franklin St. TA 5-6748  
Utah, Salt Lake City—Wayne Wiscomb Co., P.O. Box 19. EL 5-9563

**FISHER GOVERNOR CO.**, Box 307, Marshalltown, Ia.

Regulators (pressure), Controllers, Control valves, Liquid level controls.

*Representatives*  
Calif., Los Angeles—B. R. Jones & Co., 2334 E. 8th St. MA 7-1867  
Calif., San Francisco—George R. Friederich & Co., 725 Tehama St. MA 1-3437  
Ore., Portland—R. H. Brown & Co., 5825 N.W. Front Ave. CA 7-1155  
Utah, Salt Lake City—Williams Equipment & Controls, 204 Dooly Bldg. EM 4-6421  
Wash., Seattle—Power & Controls, Inc., 5505 17th Ave., N.W. SU 3-3819

**FLEXONICS CORP.**, 1383 So. Third Ave., Maywood, Ill.

Flexible hose, tubing and expansion joints; Fitting and coupling for hydraulic or air lines.

*Branch Offices*  
Calif., Santa Ana—3324 W. Delhi Rd. KI 5-8261  
Calif., San Francisco—1485 Bayshore Blvd. DE 3-0573  
Wash., Seattle—P. O. Box 6005, Riverton Hts. CH 2-2243

*Representatives*  
Ariz., Phoenix—Barrett, Haetjens Sales, 4344 E. Indian School Rd.  
Ariz., Phoenix—Regan Mfg. Co., 100 So. 24th St.  
Calif., Los Angeles—F. D. Delafield Co., 2109 So. San Pedro  
Calif., Los Angeles—L. A. Flexible Metal Hose, 124 E. Third St. MU 2211  
Calif., Los Angeles—A. Walt Runglin Co., 672 So. Lafayette PK. DU 1-3041  
Calif., San Francisco—Industrial Hose Co., 154 Eighth St. HE 1-7417  
Calif., San Francisco—Milmac, 280 Seventh St.  
Colo., Denver—G. Edwin Garrett Sales, 2055 Quince St. FL 5-3282  
Colo., Denver—Plant Equipment Co., 1400 Market St. AL 5-5411  
Colo., Denver—Thermo Tech Products Co., 2466 So. Delaware.  
Ida., Boise—Richardson Equipment Co., 612 Front St.  
Ore., Portland—E. S. Constant Co., 1814 S. E. Seventh Ave.  
Utah, Salt Lake City—Capitol City Steel Co., 324 W. Eighth St.  
Wash., Spokane—Arthur Forsyth Co., No. 120 Division St.

**FLINTKOTE CO.**, see ORANGEBURG MFG. CO., a div.

**FOOTE BROS. GEAR & MACHINE CORP.**, 4545 So. Western Blvd., Chicago 9, Ill.

Gears, Speed reducers, Power transmission equipment.

*Branch Office*  
Calif., South Gate—3529 Firestone Blvd. LO 7-5891

*Representatives*  
Ariz., Phoenix—Edward D. Maltby, Inc., 424 W. Jefferson  
Calif., Anaheim—Edward D. Maltby Co., Inc., 1520 W. Lincoln  
Calif., Fresno—Commercial Mfg. & Supply Co., 2570 Railroad Ave. AD 7-6101  
Calif., Huntington Park—Mechanical Drives Co., 5100 Pacific Blvd. LU 3-4909

Calif., Long Beach—Edward D. Maltby, Inc., 2041 Anaheim Rd.  
Calif., Los Angeles—Edward D. Maltby, Inc., 1940 S. Figueroa St. RI 7-9191  
Calif., Redding—Redding Industrial Electric Co., 3990 Highway 99 S.  
Calif., San Diego—Edward D. Maltby, Inc., 745 15th St.  
Calif., San Francisco—Chas. A. Fowler Co., 979 Bryant St.  
Calif., San Francisco—Western Machinery Co., 650 Fifth St. EX 7-1717  
Calif., Santa Clara—Whitney Industrial Drives, 2311 Lafayette St. CH 8-4664  
Calif., Stockton—Stockton Iron Works, P.O. Box 1331. HO 6-7091, HO 5-0216  
Colo., Cripple Creek—Union Supply Co.  
Colo., Denver—Union Supply Co., 5460 Colorado Blvd.  
N. Mex., Carlsbad—Carlsbad Supply Co., 501 Park Dr.  
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271  
Wyo., Casper—Union Supply Co., 208 N. Market.

**FORT WAYNE DIV., WEATHERHEAD CO.**, 128 W. Washington Blvd., Fort Wayne, Ind.

Automotive and industrial fittings, Hydraulic hose and fittings, Ermeto flareless couplings, Reusable hose ends, Clamp type hose ends, Swaged hose assemblies, Drain and shut-off cocks, Dash controls, Tube working tools, Barb-bit push-on hose ends.

*Branch Offices*  
Calif., Glendale—1736 Standard Ave. CH 5-1891  
Calif., Martinez—216 Carolos Dr. MU 5-1838  
Calif., Thousand Oaks—1342 La Jolla Dr. HU 5-3834

*Representatives*  
Ariz., Phoenix—Pratt-Gilbert Hardware Co., 701 So. Seventh St.  
Ariz., Phoenix—Thunderbird Sales Co., 2255 W. McDowell.  
Calif., Huntington Park—Mahl Steel & Bolt Co., 3081 E. Slauson Ave.  
Calif., Los Angeles—Ralph W. Atkinson Co., 3712 Santa Fe Ave.  
Calif., Los Angeles—Pacific Metals Co., Ltd., 2187 So. Garfield St.  
Calif., Los Angeles—Republic Supply Co., 2600 So. Eastland Ave.  
Calif., San Diego—Mission Pipe & Supply Co., 200 Ninth Ave.  
Calif., San Diego—Nuttall-Styris Co., 825 Columbia St.  
Calif., San Francisco—Adam-Hill Co., 244 Ninth St.  
Calif., San Francisco—Pacific Metals Co., Ltd., 1900 Third St.  
Calif., San Marino—Jay H. Collin & Co., 2491 Mission St.  
Calif., Stockton—Stockton Iron Works.  
Calif., Torrance—National Supply Co., 1524 Border Ave.  
Calif., Wilmington—J. M. Costello Supply Co., Inc., 221 No. Avalon Blvd.  
Calif., Wilmington—Diesel Control Corp., 218 No. Marine St.  
Colo., Denver—Plant Equipment Co., 1400 Market St.  
Colo., Denver—E. C. Wild Products Co., 137 So. Lincoln  
N. Mex., Carlsbad—Mine Supply Co., 402 So. Main St.  
Ore., Eugene—Oregon Supply Co., 250 W. Fourth Ave.  
Ore., Portland—Goodyear Rubber & Asbestos Co., 205 N.W. Fifth Ave.  
Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier St.  
Ore., Portland—Paramount Supply Co., 1307 S. E. Stark St.  
Utah, Salt Lake City—C. H. Spencer & Co., 210 W. 33rd St.  
Utah, Salt Lake City—Pacific Metals Co., Ltd., 261 W. Fifth St.  
Wash., Aberdeen—Mill & Logging Supply.  
Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave.  
Wash., Seattle—Tubesupply, 2931 E. Marginal.  
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So.  
Wash., Spokane—American Machine Co., W. 1027 Broadway Ave.  
Wash., Tacoma—Paramount Supply Co., 1936 Pacific Ave.  
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.  
Wyo., Casper—Wyoming Hardware Co., 620 W. Yellowstone.

**FOSTER, L. B., CO.**, 3640 Wilshire Blvd., Suite 501, Los Angeles 5, Calif.

See advertisement on page 127

Rail (new and relaying), Switch material (track accessories), Steel pipe (tasted and structural), Valves, fittings, flanges, Piling, Bridge rail

**FRANKLIN ELECTRIC CO., INC.**, 400 E. Spring St., Bluffton, Ind.

Electric motors (fractional, submersible, submatic, Inst-O-Verse, Uniseal and workshop).

*Branch Office*  
Calif., Los Angeles—8225 Beverly. OL 1-3220

**FULLER CO.**, 124 Bridge St., Cata-sauqua, Pa.

Rotary compressors, Vacuum pumps, Electric control panels, Pneumatic conveying systems for fly ash handling.

*Branch Offices*  
Calif., Los Angeles—5225 Wilshire Blvd. WE 3-7126  
Calif., San Francisco—564 Market St. YU 6-5486  
Wash., Seattle—120 Sixth Ave. No. MU 2-3131

*Representatives*  
Ariz., Tucson—Central Station Equipment Co., 2323 Aviation Highway. Phone 3-2493  
Colo., Denver—Landes, Zachary & Peterson Co., 275 Kalamath St. MA 3-6203  
Ore., Medford—Cal-Ore Mach. Co., 1105 Court St. Phone 3-4507  
Ore., Portland—Roy K. Farris, 4131 N.E. Stanton, AT 2-9755  
Wash., Spokane—Harley M. Yake, P.O. Box 4145, Sta. B. Phone 4-7869

**FULTON SYLPHON DIV., ROBERT-SHAW-FULTON CONTROLS CO.**, P. O. Box 400, Knoxville 1, Tenn. Ph. 4-1641

Controls (temperature, pressure), Regulators (temperature, pressure), Packless valves, Expansion joints, Automatic radiator valves, Metal bellows and assemblies, Automobile thermostats.

*Branch Office*  
Calif., Los Angeles—3101 Imperial Highway. NE 6-9791

*Representatives*  
Ariz., Phoenix—Carns-Hoaglund Co., 420 N. 15th Ave. AL 8-2793  
Calif., San Francisco—Norman Brown Co., 766 Minna St., UN 1-0144  
Ore., Portland—Bert Farnes Co., 317 Bldrs. Exchange Bldg. CA 7-1766  
Utah, Salt Lake City—Midgley-Huber Co., 44 W. Eighth So. St. DA 2537  
Wash., Seattle—Heating Service Co., 314 Ninth Ave. No. MA 8660  
Wash., Spokane—Frederick Co., P.O. Box 2152. BR 1444

**FURNAS ELECTRIC CO.**, 1043 McKee St., Batavia, Ill.

Controls (electric motor)—magnetic starters, drum controllers, pressure switches, and pilot devices.

*Representatives*  
Ariz., Phoenix—Southwest Sales Co., 1620 E. Earll Dr. CH 4-1331  
Calif., Los Angeles—Calhoun & Poxon Co., 5449 Alhambra Ave. CA 5-2328  
Calif., San Francisco—John F. Cady Co., Sales Mart Bldg. JU 5-4108  
Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988  
Ore., Portland—Donald Co., P.O. Box 7013. CA 2-4343  
Utah, Salt Lake City—J. Henry Jones Co., 120 Apricot Ave. Phone 5-4191  
Wash., Seattle—Muth-Richards Co., 1804 Bush Pl. CA 2128

*Distributors*  
Ariz., Phoenix—Daley Electric Co., 1825 E. Jefferson

Ariz., Phoenix—Hanson's Supply, 2310 W. McDowell

Ariz., Phoenix—Salt River Pump & Supply Co., 2846 Grand Ave.

Ariz., Phoenix—State Equipment & Supply, 416 So. 7th Ave.

Calif., Burbank—Coast Wholesale Electric Co., 2600 W. Magnolia

Calif., Fresno—Arrow Electric Co., 645 Broadway St.

Calif., Fresno—Snider Electric Co., 2377 So. G St.

Calif., Inglewood—Inglewood Wholesale Co., 923 Prairie Ave.

Calif., Los Angeles—Burke Engineering Co., 1204 W. Washington

Calif., Los Angeles—Main Electric Supply Co., 6700 So. Main St.

Calif., Los Angeles—Marshall Tool & Supply Co., 2850 E. Olympic

Calif., No. Hollywood—Cal-State Electric Co., 10711 Chandler Blvd.

Calif., No. Hollywood—Dyer's Electric Supply Co., 7350 Varna Ave.

Calif., Redding—Moty & Van Dyke, Inc., Highway 99 So.

# G & W ELECTRIC—GENERAL ELECTRIC

Calif., Richmond—Pioneer Electric Co., 929 Chanslor Ave.  
 Calif., Sacramento—Shasta Distributors, 2001 Fulton Ave.  
 Calif., Sacramento—Superior Sales Co., 1725 19th St.  
 Calif., San Diego—California Electric Works, 424 8th St.  
 Calif., San Diego—Southwest Supply Co., 510 Eighth Ave.  
 Calif., San Francisco—Frazar & Hansen, Ltd., 301 Clay St.  
 Calif., San Francisco—Herning Co., 1178 Folsom St.  
 Calif., San Francisco—Nadon Engr. & Sales Co., 7 Front St.  
 Calif., San Francisco—Refrigerator & Power Specialties, 380 Brannan St.  
 Calif., San Francisco—Star Delta Electric Works, 50 Shipley  
 Calif., San Jose—San Jose Armature & Motor, 1002 So. 2nd St.  
 Calif., Stockton—Refrigerator & Power Specialties, 1258 No. Union St.  
 Colo., Denver—Consolidated Parts Distributors, 1075 Galapago St.  
 Colo., Denver—Hendrie & Bolhoff Co., 1635 17th St.  
 Colo., Denver—Union Supply Co., 5460 Colorado Blvd.  
 Nev., Las Vegas—Hank Electric Motor Service, 13 W. Charleston  
 N. Mex., Eunice—Gary Electric, P. O. Box 111  
 Ore., Milton-Freewater—Widner Electric Co., 12 N.W. Fifth Ave.  
 Ore., Portland—Platt Electric Supply, 1305 N.W. Davis St.  
 Utah, Salt Lake City—Stuart Electric Co., 13 Kensington Ave.  
 Wash., Seattle—Palmer Electric Co., 307 Westlake Ave.  
 Wash., Seattle—Star Machinery Co., 241 Lander St.  
 Wash., Spokane—Star Machinery Co., 415 E Sprague Ave.  
 Wash., Tacoma—Center Electric Engng. Corp., 1501 Center St.  
 Wash., Tacoma—Crescent Electric Co., 920 Center St.  
 Wash., Walla Walla—Ault Irrigation Equipment, 1020 W. Pine St.  
 Wash., Yakima—Cooper Electric Motor Service Co., 205 So. Fourth Ave.

## G & W ELECTRIC SPECIALTY CO., 3500 W. 127th St., Blue Island, Ill.

High voltage cable devices, Pothheads, Cable boxes, Oil fuse cutouts, Oil switches, Switchgear, Splicing kits, insulating compound, Joints.

### Representatives

Ariz., Phoenix—F. W. Gorman, c/o H. O. Hunn, P.O. Box 10065, CR 4-1323  
 Calif., Los Angeles—R. E. Cunningham & Son, 530 W. Sixth St. MA 6-1105  
 Calif., San Francisco—C. E. Ingalls & Sons, Monadnock Bldg. GA 1-2916  
 Colo., Denver—H. C. Guire & Co., 715 S. York St. SP 7-2864  
 N. Mex., Albuquerque—Frank W. Gorman, c/o John Ridenbaugh, P. O. Box 743, CH 7-1596  
 Utah, Salt Lake City—Riter Engineering Co., P.O. Box 2187, IN 7-9449  
 Wash., Seattle—W. R. Hendrey Co., Smith Tower Bldg. MA 3-3968

## GALLAND-HENNING, MFG. CO., 2753 South 31st St., Milwaukee 46, Wis.

Cylinders (air and hydraulic, single and double acting), Control valves (air and hydraulic, 3 and 4 way; hand, foot, cam and solenoid operated), Special fluid power devices.

### Representatives

Calif., Los Angeles—Willard Engineering Co., 2709 So. Hill St. RI 7-0538  
 Calif., San Francisco—Transmission Engineering Co., 427 Bryant St. SU 1-4738  
 Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1253  
 Ida., Lewiston—Jameson Machine Supply Co. Phone 3-4517  
 Mont., Missoula—Miller Machinery Co., Highway 93 So. P.O. Box 1496. Phone 9-2309  
 Ore., Medford—Cal-Ore Machinery Co., 1105 Court St. Phone 2-6155  
 Ore., Portland—Caldwell Machinery Co., 738 N.W. Gilian St. CA 6-3568  
 Wash., Seattle—E. C. Griffin Co., 539 1st Ave. So. MA 3-4216  
 Wash., Spokane—Western Machinery Co., No. 808 Division St. FA 7-1501

## GARDNER-DENVER, Front St., Quincy, Ill.

Air compressors (portable, stationary), Motors (air), Pumps (hydraulic power), Air tools.

**Branch Offices**  
 Calif., Los Angeles—7654 E. Slauson Ave. RA 3-8711  
 Calif., San Francisco—811 Folsom St. EX 2-8747  
 Colo., Denver—1727 E. 39th Ave. AC 2-9393  
 Ida., Wallace—407 Seventh St. Phone 1139  
 Mont., Butte—215 E. Park St. Phone 2-2862  
 Utah, Salt Lake City—113 W. Second So. St. EM 4-3302  
 Wash., Seattle—615 Eighth Ave. So. MA 4-1115

## GAST MFG. CORP., Box 117-W, Benton Harbor, Mich.

Rotary air motors (1/20 to 7 hp.), Rotary air compressors (0.5 to 50 cfm, below 30 psig), Rotary vacuum pumps (dry air, 0.5 to 50 cfm, up to 28 in. Hg. gauge).

### Representatives

Calif., Los Angeles—Brenner-Fiedler & Assoc., 7563 Melrose Ave. WE 3-3811  
 Calif., San Francisco—James Wilbee Co., 420 Market St. YU 6-3799  
 Ore., Portland—Pacific Pumping Co., 526 N. W. Broadway, CA 8-2121  
 Wash., Seattle—Pacific Pumping Co., 114 W. Harrison St. AT 4-1424

## GATES RUBBER CO., THE, 999 So. Broadway, Denver 17, Colo.

Belts (flat, high speed, variable speed), Belts, V (rubber), Rubber hose (air, steam, hydraulic), Pulleys, Sheaves.

(Sales representatives in all principal Western cities.)

## GEAR ENGINEERING & MFG. CO., INC., 2826 Norton Ave., Lynwood, Calif. NE 8-1963

Collars (shaft), Gears (bevel, helical, spur, etc.), Gears (worm), Shafts, Splines, Sprockets.

## GEDNEY ELECTRIC CO., 1270 Sixth Ave., New York 20, N. Y.

Conduits and fittings (electric).

### Representatives

Calif., Los Angeles—Rutkin Electric Sales Corp., 935 Stanford Ave. TU 1224  
 Calif., San Francisco—Baxter Co.  
 Colo., Denver—Bacon Electric Equipment Corp., Portland—Sanderlin Co.  
 Utah, Salt Lake City—Darger Co.  
 Wash., Seattle—Sanderlin Co., 129 First Ave. W. MU 7777

## GENERAL CABLE CORP., 730 Third Ave., New York 17, N.Y.

All types of electrical wire and cable.

### Branch Offices

Ariz., Phoenix—3316 E. Washington St. BR 5-5401  
 Calif., Emeryville—6221 Hollis St. OL 2-7194  
 Calif., Los Angeles—2906 Leonis Blvd. LU 2-8327  
 Calif., Sacramento—915 Fee Dr. WA 2-5881  
 Calif., San Bernardino—1321 No. E St. TU 4-7941  
 Calif., San Diego—520 E St. BE 4-8538  
 Calif., San Francisco—185 Industrial St. MI 8-4140

Calif., San Jose—173 W. San Fernando St. CY 7-8415

Calif., Santa Monica—1230 Fourth St. EX 3-9757  
 Colo., Denver—4201 E. 48th Ave. FL 5-5323  
 Hawaii, Honolulu—742 Ala Moana Blvd. Phone 6-3712  
 N. Mex., Albuquerque—2100 Zearing Ave. N.W. CH 7-0547

Ore., Portland—2215 N.W. Quimby St. CA 7-5556  
 Utah, Salt Lake City—22 Jeremy St. DA 2-5829  
 Wash., Seattle—1137 W. Hanford St. MA 2-4271

## GENERAL CONTROLS CO., 801 Allen Ave., Glendale 1, Calif.

Hydramotor Electro-hydraulic valve actuators, Tork-Master electric valve operators, Hammel-Cahl air-operated proportioning valves, Foster steam specialty and regulator valves, Flow tubes, Automatic controls for automated processes, including counters, timers, actuators, potentiometers, relays, switches and industrial control systems.

### Branch Offices

Ariz., Phoenix—124 E. Roosevelt. AL 3-1368  
 Calif., Burbank—One W. Alameda Ave. VI 9-2181

Calif., San Francisco—800 Bryant St. SU 1-7580 and 81

Colo., Denver—1162 Elati St. CH 4-8776

Ore., Portland—4611 S.E. Boise St. BE 4-9373

Utah, Salt Lake City—19 East 2nd St. S. EL 5-7611  
 Wash., Seattle—925 Westlake Ave., N. AT 4-0440

## GENERAL ELECTRIC CO., CIRCUIT PROTECTIVE DEVICES DEPT., 41 Woodford Ave., Plainville, Conn.

Circuit breakers (molded case), Switches (disconnect, open knife, safety), Panelboard component parts, Circuit breaker load centers, Fusible service entrance.

### Branch Offices

Calif., Los Angeles—2450 E. 23rd St. LU 3-6722

Calif., Oakland—600 16th St. TE 2-0577  
 Calif., Sacramento—Builders Exchange Bldg. 1331 T St. GI 3-6960

Calif., San Francisco—1485 Bayshore Blvd. JU 4-9452

Colo., Denver—1735 York St. DU 8-4157  
 Ore., Portland—2929 N.W. 29th Ave. CA 8-0261

Utah, Salt Lake City—Rm. 212, 65 E. Fourth So. EM 3-9876

Wash., Seattle—5000 E. Marginal Way. MO 5-4800

Wash., Spokane—So. 162 Post St. TE 8-3621

## GENERAL ELECTRIC CO., CHEMICAL & METALLURGICAL DIV., CONSTRUCTION MATERIALS SALES OPERATION, 1285 Boston Ave., Bridgeport 2, Conn.

Wires, Cables, Cords; Steel raceways, Underfloor wiring systems; Wiring devices, Remote control wiring.

### Branch Offices

Calif., Los Angeles—3000 E. 46th St. LU 2-8211

Calif., San Diego—1240 7th Ave. BE 3-6461  
 Calif., San Francisco—870 Market St. DO 2-3740

Colo., Englewood—3385 So. Bannock St. SU 1-5707

Ore., Portland—2106 N.E. 56th St. BE 2-6639

Utah, Salt Lake City—200 So. Main St. EM 4-1891

Wash., Seattle—220 Dawson St. DA 2-6176

Wash., Spokane—So. 162 Post St. TE 8-3621

### Distributors

Alaska, Anchorage—Gen. Elec. Sy. Co.  
 Ariz., Phoenix—Gen. Elec. Sy. Co.

Ariz., Tucson—Gen. Elec. Sy. Co.

Calif., Burbank—Coast Whse. Elec.

Calif., El Centro—Gen. Elec. Sy. Co.

Calif., Fresno—General Elec. Sy. Co.

Calif., Inglewood—Taylor Whse. Elec. Co.

Calif., Long Beach—Gaines Elec. Sy. Co.

Calif., Long Beach—Gen. Elec. Sy. Co.

Calif., Los Angeles—General Elec. Sy. Co.

Calif., Los Angeles—Javin Elec. Sy. Co.

Calif., Los Angeles—Norton Electric Whole-sale Mart.

Calif., Los Angeles—Osipow Electric Supply Co.

Calif., Los Angeles—Supreme Wholesale Elec. Co.

Calif., North Hollywood—Gen. Elec. Sy. Co.

Calif., Oakland—General Elec. Sy. Co.

Calif., Sacramento—Gen. Elec. Sy. Co.

Calif., San Bernardino—Gen. Elec. Sy. Co.

Calif., San Diego—General Elec. Sy. Co.

Calif., San Francisco—General Elec. Sy. Co.

Calif., San Jose—Gen. Elec. Sy. Co.

Calif., Santa Ana—Orange County Whse. Elec. Co.

Colo., Colorado Springs—Gen. Elec. Sy. Co.

Colo., Denver—General Electric Sy. Co.

Colo., Grand Junction—Gen. Elec. Sy. Co.

Colo., Pueblo—Gen. Elec. Sy. Co.

Hawaii, Hanapepe, Kauai—American Factors, Ltd.

Hawaii, Hilo—American Factors, Ltd.

Hawaii, Honolulu—American Factors, Ltd.

Ida., Boise—Gen. Elec. Sy. Co.

Ida., Idaho Falls—Gen. Elec. Sy. Co.

Mont., Billings—Gen. Elec. Sy. Co.

Mont., Butte—Gen. Elec. Sy. Co.

Mont., Great Falls—Gen. Elec. Sy. Co.

Nev., Las Vegas—Standard Wholesale Sy. Co., Inc.

N. Mex., Albuquerque—Gen. Elec. Sy. Co.

N. Mex., Farmington—Gen. Elec. Sy. Co.

N. Mex., Hobbs—Southwestern Electric Sy. Co.

Ore., Eugene—Eoff Elec. Co.

Ore., Portland—Eoff Elec. Co.

Ore., Portland—Gen. Elec. Sy. Co.

Ore., Salem—Eoff Electric Co.

Utah, Ogden City—Gen. Elec. Sy. Co.

Utah, Salt Lake City—Gen. Elec. Sy. Co.

Wash., Aberdeen—Aberdeen Elec. Sy. Co.

## GENERAL METALS—HARTFORD STEEL BALL

Wash., Bellingham—Bellingham Sy. Inc.  
Wash., North Seattle—Gen. Elec. Sy. Co.  
Wash., Pasco—Gen. Elec. Sy. Co.  
Wash., Seattle—Gen. Elec. Sy. Co.  
Wash., Spokane—General Elec. Sy. Co.  
Wash., Tacoma—General Elec. Sy. Co.  
Wash., Tacoma—Home Elec. Co.  
Wash., Walla Walla—Elec. Sy. & Fixture Co.  
Wyo., Casper—Gen. Elec. Sy. Co.

**GENERAL ELECTRIC CO.**, Distribution Assemblies Dept., 41 Woodford Ave., Plainville, Conn.

Low voltage distribution and control equipment; circuit breakers; disconnect switches; safety switches; open knife switches; panelboard components; circuit load centers and fusible service entrance equipment; panelboards; motor control centers; washers; switchboards and distribution center unit substations.

*Branches*

Calif., Los Angeles—2450 East 23rd St. LU 3-6722  
Calif., Sacramento—Builders Exchange Bldg., 1331 "T" St. GI 3-6960  
Calif., San Francisco—1485 Bayshore Blvd. JU 4-9452  
Ore., Portland—2929 N.W. 29th Ave. CA 8-0281  
Wash., Seattle—5000 East Marginal Way. PA 5-4800  
Wash., Spokane—South 162 Post St. TE 8-3621

**GENERAL METALS CORP.**, see ADEL PRECISION PRODUCTS DIV.

**GENERAL MOTORS CORP.**, see DEL-CO PRODUCTS DIV.

**GENERAL MOTORS CORP.**, see DETROIT DIESEL ENGINE DIV.

**GERBING MANUFACTURING CORP.**, So. State Rd., Elgin, Ill.

Couplings (flexible shaft), Motor bases (adjustable), Motor drives (mechanical, variable speed), Pulleys (variable speed), Sheaves (standard and counter-shaft V-groove).

*Representatives*

Ariz., Phoenix—Edward D. Maltby Co., 424 Jefferson St.  
Calif., Fresno—Commercial Manufacturing & Supply Co., 2432 Railroad Ave.  
Calif., Los Angeles—B B Supply Co., 4849 Telegraph Rd.  
Calif., Los Angeles—Edward D. Maltby Co., 1940 S. Figueroa St. RI 7-9191  
Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 So. Central Ave. AD 3-7221  
Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304  
Calif., Pomona—Reliable Bearing & Supply Co., 777 E. Second St.  
Calif., Riverside—Reliable Bearing & Supply Co., 3545 Main St.  
Calif., San Diego—Edward D. Maltby Co., 745 Fifteenth St.  
Calif., San Francisco—Monarch Corp., 55 New Montgomery St.  
Calif., San Leandro—Monarch Corp., 2075 Williams St. SW 8-0980  
Calif., Santa Clara—Monarch Corp., 2455 The Alameda  
Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St.  
Ida., Boise—Western Bearings, Inc., 520 Front St.  
Ida., Pocatello—Western Bearings, Inc., 156 S. Third St.  
Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W.  
Mont., Billings—Power Transmission Equipment Co.  
Ore., Portland—J. W. Minder Chain & Gear Co., 307 S.E. Hawthorne Blvd. BE 6-1131  
Ore., Portland—Western Machinery Co., 1034 S.E. Ninth Ave. BE 6-4117  
Utah, Salt Lake City—Bearing Engineering & Sales Co., 756 So. Second St. W.  
Wash., Aberdeen—Mill & Logging Supply Co., 313 S. H St.  
Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave.  
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. S.  
Wash., Spokane—Bitco, Inc., E. 2920 28 Trent  
Wash., Tacoma—DuCharme Industrial Transmission Co., 501 E. 24th St.  
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.  
Wash., Walla Walla—Morrison Supply Co., 217-225 E. Alder St.  
Wash., Yakima—Dodge Yakima Supply Co., 302 S. 1st St.

**GLOBE WOVEN BELTING CO., INC.**, 1400 Clinton St., Buffalo 6, N.Y. FA 8484

Flat high speed endless belts, Cotton belting, Stitched canvas belting, Hycar belting, Neoprene belting.

*Representatives*

(Located in all principal Western cities.)

**B. F. GOODRICH INDUSTRIAL PRODUCTS CO.**, 500 South Main St., Akron 18, Ohio

Belting, transmission, rubber, Belt, V, rubber; Hose, hydraulic, air, steam.

*Branches*

Calif., Los Angeles—3525 S. Garfield Ave. RA 3-6692  
Calif., San Francisco—1950 Army St. AT 2-9620

*Representatives*

Representatives in major cities throughout the West. Please consult local telephone directory.

**GOODYEAR TIRE & RUBBER CO.**, 1144 E. Market St., Akron 16, Ohio

Belting, Hose, Molded-extruded goods, Rubber covered rolls, V-belts.

*Branch Offices*

Calif., Los Angeles—6666 E. Washington Blvd. RA 3-3611  
Calif., San Francisco—1717 Harrison St. UN 1-3773  
Colo., Denver—1207 Wazee St. CH 4-5465-66  
Ore., Portland—2720 N.W. 35th Ave. CA 6-2951  
Utah, Salt Lake City—46 Fayette Ave. EM 4-4387

*Representatives*

Calif., Los Angeles—Republic Supply Co. of California, 2600 So. Eastland Ave. RA 3-2511  
Calif., San Leandro—Republic Supply of California, 1919 Williams St. LO 2-0414  
Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AL 5-2091  
Ore., Portland—Breeze Supply Co., 237 S.W. Front Ave. CA 7-5447

*Representatives*

Calif., La Puente, 14500 Nelson Ave. ED 6-4571  
Calif., Oakland—949 55th St. OL 4-5700  
Colo., Denver—4150 Fox St. GR 7-0187  
Ore., Portland—1973 N.W. Lovejoy St. CA 7-5150  
Utah, Salt Lake City—415 So. 2nd East. EL 5-6787

**GOULD-NATIONAL BATTERIES, INC.**, 467 Calhoun St., Trenton 7, New Jersey

*Branch Offices*

Calif., La Puente, 14500 Nelson Ave. ED 6-4571  
Calif., Oakland—949 55th St. OL 4-5700  
Colo., Denver—4150 Fox St. GR 7-0187  
Ore., Portland—1973 N.W. Lovejoy St. CA 7-5150  
Utah, Salt Lake City—415 So. 2nd East. EL 5-6787

**GRAHAM TRANSMISSIONS, INC.**, Menomonie Falls, Wis.

Variable speed transmissions.

*Representatives*

Calif., Los Angeles—W. H. Del Mar Co., Inc., 3925 W. Slauson Ave. AX 5-6421  
Calif., San Francisco—McCarthy-Hood & Assoc., 1485 Bayshore Blvd. JU 6-1860  
Colo., Denver—J. H. Dorough Co., 1357 Harlan St. BE 7-2925  
Ore., Portland—Western Machinery Corp., 1035 S.E. Ninth Ave. BE 6-4117

**GRATON & KNIGHT CO., DIV. OF L. H. SHINGLE**, 356 Franklin St., Worcester 4, Mass.

Bolting (leather, flat, round, V), Nycon (flat bolting, nylon core), Bolting accessories (lacing, segment, dressing, etc.), Couplings (shaft, flexible), Packings (leather, mechanical).

*Branch Office*

Calif., Oakland—641 E. Eighth St. TW 3-7522

*Representatives*

Calif., Fresno—Pacific Mill & Mine, 530 Van Ness Ave.  
Calif., Sacramento—Sacramento Rubber Co., 721-23 J St.  
Calif., San Francisco—Honolulu Iron Works, 215 Market St.  
Ore., Portland—Harris Supply Co., 524 N.W. 14th Ave.  
Wash., Spokane—Washington Machinery & Supply Co., 9 W. Cataldo Ave.

**HAGAN CHEMICALS & CONTROLS, INC.**, Hagan Bldg., Pittsburgh 30, Pa.

Pneumatic and electronic control systems, Analog and digital computers, Data processing systems, Meters, Recorders, Control panels.

*Branch Offices*

Calif., Los Angeles—3040 Tweedy Blvd. LO 7-2384  
Calif., San Francisco—1485 Bayshore Blvd. JU 7-0736  
Colo., Denver—P. O. Box 7797. BE 7-2729  
Ore., Portland—7819 S. E. Powell Blvd. PR 4-1667

**HANNA ENGINEERING WORKS**, 1767 Elston Ave., Chicago 22, Ill. Cylinders (air, hydraulic), Valves (cylinder control), Pneumatic riveters.

*Representatives*

Calif., Los Angeles—Sweetland Co., 5403 Sheila St. OV 5-7200  
Calif., San Francisco—Sweetland Co., 151 Mission St. GA 1-2663

Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AM 6-2222  
Ida., Wallace—Coeur d'Alene Hardware & Foundry Co., 612 Bank St.

Ore., Portland—Power Transmission Products, 1107 N.W. 14th St. CA 7-1271  
Utah, Salt Lake City—Galigher Co., 545 W. Eighth St. EL 9-8731

Wash., Aberdeen—Industrial Electric Service Co., 319 So. I St. LE 3-2792  
Wash., Seattle—Sweetland Co., 1250 First Ave. So. MA 2-1015

**HANNIFIN CO., DIV. OF PARKER-HANNIFIN CORP.**, 651-D So. Wolf Rd., Des Plaines, Ill.

Power cylinders (air, hydraulic), Directional air control valves, Hydraulic riveting and punching equipment (portable, stationary), Presses (pneumatic, hydraulic), Air line filters, regulators and lubricators.

*Representatives*

Calif., Los Angeles—5827 W. Century Blvd. SP 6-1129

Calif., San Francisco—Fluid Power Equipment Co., 524 Second St. EX 7-3365

Colo., Denver—Landes, Zachary & Peterson Co., 601 S. Jason St. SH 4-1311

Colo., Colorado Springs—Landes, Zachary & Peterson Co., P.O. Box 1488 N. Mex., Albuquerque—Landes, Zachary & Peterson Co., 5900 Domingo Rd., N.E. AL 6-9449

Ore., Portland—Jack Ogle & Co., 2505 S.E. 11th Ave. BE 5-4080

Utah, Salt Lake City—Landes, Zachary & Peterson Co., 2501 S. State. HU 7-7873

Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

Wash., Seattle—Western Dynamics, Inc., 220 Westlake N. MU 2-2171

*Distributors*

(For Crown line of air line filters, regulators, and lubricators only)

Calif., Emeryville—Rucker Co., 4700 San Pablo Ave. OL 3-5221

Calif., South Gate—Rucker Co., 4956 Firestone, LO 4-2521

Ore., Portland—Jack Ogle & Co., 2505 S.E. 11th Ave. BE 5-4080

Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

Wash., Seattle—Western Dynamics, Inc., 220 Westlake N. MU 2-2171

**HANSEN MFG. CO.**, 4031 W. 150th St., Cleveland 35, Ohio.

Quick-connective couplings for fluid lines (air-gas, water-oil, etc.), Fittings (hose clamps, reusable, compression type).

*Representatives*

Calif., Glendale—Chester Paul Co., 1605 Victory Blvd. CH 5-3761

Calif., San Francisco—Burke Co., 2360 San Bruno, DE 3-5500

Colo., Denver—E. C. Wild Co., 1163 S. Cherokee, SH 4-1253

Wash., Seattle—Geo. W. Warden Co., 1305 Dexter Ave. AT 3-0622

**HART REDUCTION PULLEY CO.**, 1116 Adams St., Waukesha, Wis.

Shaft-mounted speed reducers, single and two speed. Differential reducers, Brakes, post type.

*Representatives*

Calif., Los Angeles—W. H. Del Mar Co., 3925 W. Slauson Ave. AX 3-5301

Ore., Portland—McGuire Bearing Co., 222 N.W. Tenth Ave. CA 6-2678

**HARTFORD STEEL BALL CO., INC.**, Jefferson Ave., W. Hartford, Conn.

*Representatives*

Calif., Los Angeles—E. D. Maltby Co., 1940 So. Figueroa St. RI 7-5611

Calif., San Francisco—Geo. M. Philpott Co., 1060 Bryant St. HE 5-5475

Colo., Denver—A. E. Werner, Petroleum Club Bldg. MA 3-9235

Ore., Portland — Bearing Sales & Service, Inc., 1645 N. W. Hoyt, CA 3-6301  
Wash., Seattle — Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 2-0331

**HELWIG CO.**, 2550 No. 30th St., Milwaukee 10, Wis.

**Carbon brushes, Carbon products.**

**Representatives**  
Calif., Los Angeles — F. S. Fletcher, 4150 So. Main St. AD 3-5203  
Calif., San Francisco — Advance Carbon & Elec., 2505 Mariposa St. HE 1-4034  
Colo., Denver — M. G. Mueller, 1846 Blake St. CH 4-4245  
Ore., Portland — H. E. Perkins, 317 N.W. Broadway, CA 7-3631  
Utah, Salt Lake City — J. R. Christensen, 247 E. Fifth So. EM 3-4419  
Wash., Seattle — D. H. Perkins, 408 Occidental, EL 5707

**HERCULES MOTORS CORP.**, 101 11th St. S. E., Canton 2, Ohio

**Engines and power units (air cooled, liquid cooled, hp. from 4 to 630 in gasoline and diesel).**

**Representatives**  
Ariz., Phoenix — Schuler & James of Arizona, 607 No. 19th Ave.  
Calif., Bakersfield — Engine & Equipment Co., 2102 E. 28th St.  
Calif., Long Beach — Engine & Equipment Co., 2102 E. 28th St.  
Calif., Los Angeles — Hercules Engine & Parts Co., 6925 Bandini Blvd.  
Calif., San Diego — Westerlund & Lange, 1432 Union St.  
Calif., San Francisco — Bay Engine & Parts Co., 540 Treat Ave.  
Colo., Denver — Liberty Trucks & Parts Co., 690 Lincoln St.  
Ida., Boise — Sawtooth Co., 1115 Grove St. Mont., Billings — Western Construction Equipment Co., 505 No. 24th St.  
N. Mex., Albuquerque — Pound Brothers, 412-14 W. Marble.  
Ore., Portland — McKinley Corp., 721 S.E. Yamhill St.  
Utah, Salt Lake City — Diamond T. Utah, Inc., 1045 So. Main St.  
Wash., Seattle — Hatch & Kirk, 5111 Leary Ave.

**HERTNER ELECTRIC CO.**, 12690 Elmwood Ave., Cleveland 11, Ohio

**Motor generator battery chargers, High frequency power supplies, Magnet generators.**

**Representatives**  
Ariz., Phoenix — Howard Jordan, 1007 Grand Ave. AL 2-5183  
Calif., Los Angeles — John Hyatt Co., 6059½ E. Olympic Blvd. RA 3-6022  
Calif., San Francisco — McCarthy-Hood & Assoc., 1485 Bayshore Blvd. JU 6-1860  
Colo., Denver — Hubert Kaub & Co., 1025 Santa Fe Dr. MA 3-4666  
Wash., Seattle — Stephen Thurlow Co., 1912 Minor Ave. JU 2-5488

**HEVI DUTY ELECTRIC CO.**, 2040 W. Wisconsin Ave., Milwaukee 1, Wis. **Transformers.**

**Branch Office**  
Calif., Culver City — 10826 Venice Blvd. VE 7-1205

**Representatives**  
Ariz., Phoenix — Electrical Engr. & Sales Corp., 106 E. Pierce St. AL 3-0927  
Calif., Burbank — Coast Wholesale Elec. Co., 2600 W. Magnolia Blvd. TH 2-5137  
Calif., Los Angeles — California Wholesale Elec. Co., 2548 Yates Ave. RA 3-6711  
Calif., San Francisco — Eichorn & Melchior, Inc., 749 Bryant St. DO 2-1038  
Ore., Portland — Donal Co., P. O. Box 7013. CH 6-3131  
Wash., Seattle — Muth-Richards Co., 1804 Bush Pl. EA 3-2128

**HEWITT - ROBINS, INC.**, 666 Glenbrook Rd., Stamford, Conn.

**Industrial hose, Vibrating conveyors, Screens, Shakeouts, Speed reducers, Pillow blocks, Gears, Cast iron pulleys, Flexible couplings, V-belt drives, Conveyor belting and idlers, Car pullers, Door hoists, Skip hoists, Rotary drives.**

**Branch Offices**  
Ariz., Phoenix — 207-B Camelback Rd. CR 4-0245  
Calif., Los Angeles — 2604 S. Malt Ave. RA 3-4771  
Calif., San Francisco — 55 New Montgomery St. EX 2-4060  
Colo., Denver — 5075 Colorado Blvd. FL 5-8751  
Ore., Portland — 302 S.W. Third Ave.

Utah, Salt Lake City — 458 S. Third St. E. DA 2-1144  
Wash., Seattle — 641 Dexter Horton Bldg. MA 2-8640

**HILLIARD CORP., THE**, 100 W. Fourth St., Elmira, N. Y.

**Clutches.**

**Representatives**  
Ariz., Tucson — Central Station Equipment Co., 2323 Aviation Highway. Phone 3-2493  
Calif., El Monte — Ledeen, Inc., Gilman Rd. at Garvey Blvd. CU 3-3163  
Calif., San Francisco — Elder Co., 333 Seventh St. UN 1-5480  
Colo., Denver — Andrew T. Lobel, 1700 Fifteenth St. MA 3221  
Hawaii, Honolulu — American Factors, Ltd., P.O. Box 3236  
Ore., Portland — Fred W. Carlson & Associates, 935 Northwest 12th Ave., Rm. 133. CA 8-3798  
Utah, Salt Lake City — Sales Engineering Co., Inc., 326 W. 8th St. So. Phone 5-1162  
Wash., Seattle — Fred W. Carlson, 1201 Dexter Ave. AT 4-4630

**HOFFMAN ENGINEERING CORP.**, Ninth & Tyler Sts., Anoka, Minn.

**Sheet metal electrical enclosures and wireways.**

**Branch Office**  
Calif., Venice — 1609 Penmar Ave. EX 9-8305  
**Representatives**  
Ariz., Phoenix — Norman Vigoren  
Calif., Berkeley — W. A. Borden, 1813 San Lorenzo Ave. LA 5-1357  
Colo., Denver — Everett Vonier Co., 1160 Elate  
Ore., Portland — Donal Co., P. O. Box 7013. CH 6-3131  
Wash., Seattle — Muth-Richards Co., 1804 Bush Pl. CA 2128

**HOFFMAN SPECIALTY MFG. CORP.**, 1700 W. Tenth St., Indianapolis 7, Ind.

**Steam vent valves, Water vent valves, Steam traps, Pressure reducing valves, Temperature regulators, Condensation pumps, Vacuum pumps, Circulators, Y strainers.**

**Representatives**  
Calif., Los Angeles — Paul Bradfield & Co., 864 So. Robertson Blvd. OL 5-9486  
Calif., San Francisco — R. J. Fuite, 1070 Bryant St. MA 1-7417  
Colo., Denver — Edwin P. Cook Co., 1863 Wazee, KE 4-2371  
Ore., Portland — Larry Harrington Co., 1989 N.W. Lovejoy St. CA 8-4324  
Wash., Seattle — Larry Harrington Co., Inc., 405A E. 45th St.

**HOSE ACCESSORIES CO.**, Lehigh Ave. & 17th St., Philadelphia 32, Pa.

**Fitting and couplings (air, hydraulic), Valves (air power line).**

**Representatives**  
Calif., Fresno — Central Supply Co., 424 M St.  
Calif., Los Angeles — Coxwells, Inc., 2207 So. Main  
Calif., San Francisco — Gilmore Supply Co., 821 Folsom St.  
Ore., Portland — Goodyear Rubber & Asbestos Co., 205 N. W. Fifth Ave.

**HOOVER ELECTRIC CO.**, 2100 S. Stoner Ave., Los Angeles 25, Calif.

**Controls (electric motor), Generators (electric), Motors (electric DC, AC).**

**HOUGHTON, E. F., & CO.**, 303 West Lehigh Ave., Philadelphia 33, Pa.  
**Hydraulic fluids, Packings, Cutting fluids, Lubricants.**

**Branch Offices**  
Calif., Los Angeles — 2445 E. 26th St. LU 2-5242  
Calif., San Francisco — 1500 Davidson Ave. VA 4-3207  
Ore., Portland — 208 S.W. Stark St. CA 8-0211  
Wash., Seattle — 90 Dearborn St. MA 7961

**HOWARD INDUSTRIES, INC.**, 1760 State St., Racine, Wis.

**Fractional hp. electric motors.**

**Representatives**  
Calif., Los Angeles — Howard Ind., Inc., 942 So. La Brea Ave. WE 8-2444  
Colo., Denver — A. J. Nelson Co., P. O. Box 5502. KE 4-6751

**HOWELL ELECTRIC MOTORS CO.**, 409 No. Roosevelt, Howell, Mich.

**Howell Red Band motors (a-c. motors, 1/6 to 300 hp.)**

**Branch Offices**

Calif., Los Angeles — John Hyatt Co., 6059½ E. Olympic Blvd. RA 3-6022  
Colo., Denver — Glenn Reece Co., 2001 W. Alameda Ave. SH 4-3388  
Utah, Salt Lake City — Campbell-Elsey & Co., 1926 Sheridan Rd. HU 4-8879

**Distributors**

Ariz., Phoenix — Electric Rewinding Co., 2906 Grand Ave.  
Colo., Denver — Industrial - Denver Co., 1660 11th St.  
Colo., Englewood — Howry-Berg Steel & Iron Works, 1366 W. Oxford.  
Colo., Littleton — O. K. Service Supply Co.  
Wash., Seattle — W. A. Crowder, 2621 W. Boston St.  
Wash., Tacoma — Electric Motor Service Co., 707 Commerce St.

**HUB CITY IRON CO.**, Aberdeen, S.D.

**Gear boxes (angle-worm, mitre), Reducers, speed (bevel gear, helical gear, shaft mounted, worm gear), Tumbling shaft assemblies, Universal joints.**

*See advertisement on page 123*

**Representatives**

Calif., Stockton — Grether & Grether, P. O. Box 47. HO 2-4124  
Calif., Whittier — Grether & Grether, P. O. Box 1036, Perry Annex. OW 7-7812

**HUBBELL, HARVEY, INC.**, State St., Bridgeport 2, Conn.

**Electrical wiring devices.**

*See advertisement on page 60*

**Branch Offices**

Calif., Los Angeles — 103 N. Santa Fe Ave. MU 7226  
Calif., San Francisco — 1675 Hudson Ave. MI 7-3240  
Colo., Denver — 1645 Wazee St. KE 6798  
Ore., Portland — 202 Regal Bldg. CA 7-1990  
Wash., Seattle — 218 Eyres Bldg. MA 3-0357

**HYATT BEARINGS DIV., GENERAL MOTORS CORP.**, Harrison, N.J.

**Bearings (roller).**

**Branch Office**

Calif., Oakland — 1419 Central Bank Bldg. TW 3-5362

**Representatives**

(Sold through all United Motors Service companies, located in all major Western cities)

**HYDRAULIC POWER DIV., HYDRAULIC PRESS MFG. CO., A DIV. OF KOEHRING CO.**, Mount Gilead, Ohio

**Controls (hydraulic), Cylinders (air, hydraulic), Motors (hydraulic), Valves (hydraulic power line), Power units (hydraulic).**

**Representatives**

Calif., Montebello — Hydraulic Equipment Co., 1208 So. Vail St. RA 3-1139  
Calif., San Diego — Hoffer Engrg. Co., 2015 Main St. PE 3-7281  
Calif., San Francisco — Power-Mac Corp., 467 So. Van Ness Ave. UN 1-1430  
Ore., Portland — Power Transmission Products Div., Portland Iron Works, 1107 N.W. 14th Ave. CA 7-1271

**HYDRECO DIV., NEW YORK AIR BRAKE CO.**, 9000 E. Michigan, Kalamazoo, Mich.

**Motors (hydraulic), Pumps (hydraulic power).**

**Representatives**

Calif., Oakland — Rucker Co., 4700 San Pablo Ave. OL 3-5221  
Calif., South Gate — Rucker Co., 4956 Firestone Blvd. LO 4-2521  
Ore., Portland — Rucker Co., 1633 N.W. 21st Ave. CA 3-0205  
Wash., Seattle — Rucker Co., 1000 Fourth Ave. MA 2-2783

# ILLINOIS TOOL—JOHNS-MANVILLE

**ILLINOIS TOOL WORKS**, see LICON DIV.

**IMPERIAL BRASS MFG. CO., THE**, 6300 W. Howard St., Chicago 48, Ill.

Fittings and couplings (air, hydraulic), Hose (air, hydraulic), Valves (air and hydraulic power line).

*Branch Offices*

Calif., Los Angeles—2419 So. Grand Ave.  
Calif., San Francisco—476 Golden Gate Ave. OR 3-1247

*Representatives*

Ariz., Phoenix—Arizona Hardware Co., 1st & Jackson Sts.

Ariz., Phoenix—Ducommon Metals & Supply Co., 2626 E. Washington St.

Ariz., Phoenix—Garrett Supply Co., 130 W. Madison St.

Ariz., Phoenix—Geo. S. Thompson Co., Inc.

Ariz., Tucson—Arizona Hardware Co., 119 No. Stone Ave.

Calif., Bakersfield—Tay-Holbrook, Inc., 3530 Chester Ave.

Calif., Emeryville—Warren & Bailey Co., 1287 66th St.

Calif., Eureka—Tay-Holbrook, Inc., 940 Broadway

Calif., Fresno—Federal Pipe & Supply Co., Parallel & Butler Aves.

Calif., Fresno—Tay-Holbrook, Inc., 920 M St.

Calif., Long Beach—American Wholesale Hardware Co., 1500 W. Anaheim St.

Calif., Los Angeles—Allied Supply Co., P.O. Box 2376 Terminal Annex

Calif., Los Angeles—California Hardware Co., 500 E. First St.

Calif., Los Angeles—Ducommon Metals & Supply Co., 4890 So. Alameda St.

Calif., Los Angeles—Garrett Supply Co., 3844 Santa Fe

Calif., Los Angeles—Keenan Pipe & Supply Co., 2112 E. 27th St.

Calif., Los Angeles—Pacific Metals Co., Ltd., 2187 So. Garfield Ave.

Calif., Los Angeles—Republic Supply Co., 2600 E. Eastland Ave.

Calif., Los Angeles—Warren & Bailey Co., 3528 So. Garfield Ave.

Calif., National City—Ducommon Metals & Supply Co., 1300 Wilson Ave.

Calif., Oakland—American Brass & Copper Co., 1920 Union St.

Calif., Pasadena—E. D. Sweetland Co., 940 No. Fair Oaks

Calif., Sacramento—Tay-Holbrook, Inc., 1801 22nd St.

Calif., Sacramento—Thomson-Diggs Co., 1801 Second St.

Calif., Salinas—Tay-Holbrook, Inc., 101 Highway South

Calif., San Carlos—Tay-Holbrook, Inc., 605 Old County Road

Calif., San Diego—Warren & Bailey Co., 266 Seventh Ave.

Calif., San Francisco—Dallman Supply Co., 7th at Townsend

Calif., San Francisco—A. J. Glesener Co., 975 Bryant St.

Calif., San Francisco—Marshall-Newell Supply Co., Spear and Mission Sts.

Calif., San Francisco—C. W. Marwedel, 1235 Mission St.

Calif., San Francisco—Miller & Stern Supply Co., 1435 Folsom St.

Calif., San Francisco—Pacific Metals Co., Ltd., 3100 Nineteenth St.

Calif., San Francisco—E. D. Sweetland Co., 151 Mission St.

Calif., San Francisco—Tay-Holbrook, Inc., 165 Eighth St.

Calif., San Jose—San Jose Supply House, 520 First St.

Calif., San Jose—Tay-Holbrook, Inc., 695 Stockton Ave.

Calif., San Leandro—Republic Supply Co., 1919 Williams St.

Calif., Santa Rosa—Tay-Holbrook, Inc., 251 Roberts Ave.

Calif., Stockton—Tay-Holbrook, Inc., 1234 So. Aurora St.

Calif., Vernon—Amstan Supply Div., American Radiator & Standard Sanitary Co., 3259 E. 46th St.

Ida., Boise—Salt Lake Hardware Co.

Ore., Eugene—American Steel & Supply Co., 44 Seventh Ave. E.

Ore., Medford—Cardona Supply Co., 1101 No. Riverside

Ore., Portland—American Steel Warehouse Co., 425 N.E. 9th Ave.

Ore., Portland—Eagle Metals, Inc., of Oregon, 2336 No. Randolph Ave.

Ore., Portland—Harris Supply Co., 524 N.W. 14th Ave.

Ore., Portland—J. E. Hazeltine & Co., 2nd & Ash Sts.

Utah, Salt Lake City—Metals Supply Co., Inc., 131 Social Hall Ave., P.O. Box 600

Utah, Salt Lake City—Pacific Metals Co., Ltd., 261 W. 5th So.

Utah, Salt Lake City—Salt Lake Hardware Co., 105 N. Third W. St.

Wash., Seattle—Campbell Industrial Supply Co., 3433 Airport Way

Wash., Seattle—Eagle Metals Co., 4755 First Ave. So.

Wash., Seattle—Schwabacher Hardware Co., 1st Ave. and Jackson St.

Wash., Seattle—Seattle Hardware Co., 591 First Ave. So.

Wash., Spokane—Eagle Metals Co., Helena at Broadway

Wash., Spokane—Jensen-Byrd Co., Box

**IMPERIAL ELECTRIC CO.**, 80 Ira

Ave., Akron, Ohio.

Electric motors (drip proof, totally enclosed, explosion proof, multi-speed, slip ring, d.c.), Generators (a.c., d.c., MG sets, frequency converters), Arbor motors (shell and shaftless), Elevator motors (traction and hydraulic).

*Branch Office*

Calif., Alhambra—1819 W. Valley Blvd. CU 3-2251

*Representatives*

Ariz., Phoenix—Yancey Sales, Inc., 64 W. Second St. WH 6-1971

Colo., Denver—Manning-Hone & Siekmeyer, 1449 So. Broadway, PE 3-3709

Ida., Twin Falls—C. K. Brown & Assoc., 404 Shoshone St. RE 3-2320

Utah, Ogden—C. K. Brown & Assoc., 366 31st St. EX 2-7562

Wash., Seattle—Standard Electric Sales, 204 W. Lucile St. PA 5-9440

**INGERSOLL KALAMAZOO DIV., BORG - WARNER CORP.**, 1810 No. Pitcher St., Kalamazoo, Mich.

Load lifter, Hug haul, Roto hoppers, Lift bates (end and side).

*Representatives*

Calif., Los Angeles—Equipment Engr. Service, 672 So. Lafayette Park Pl.

Calif., Richmond—Schultz Material Handling, 340 11th St. BE 3-7907

Colo., Denver—H. M. Rattle Co., 1398 So. Santa Fe, SP 7-9066

Wash., Seattle—Lo Lug Northwest, 215 Aloha, MU 3918

**INGERSOLL-RAND CO.**, 11 Broadway, New York 4, N. Y.

Compressors, Condensers, Engines (diesel, gas), Motors (air), Pumps, Rock drills, Tools (air, electric), Turbo-blowers.

*Branch Offices*

Calif., Los Angeles—5533 E. Olympic Blvd. AN 8-6761

Calif., San Francisco—350 Brannan St. GA 1-6330

Colo., Denver—1641 Blake St. KE 4-2245

Mont., Butte—945 So. Montana St. Phone 2-0451

Ore., Portland—Rm. 1004, Broadway Bldg., Broadway & Morrison Sts. CA 3-1852

Utah, Salt Lake City—144 S.W. Temple St. DA 8-8127

Wash., Seattle—526 First Ave. So. MA 2866

**I-T-E CIRCUIT BREAKER CO.**, 19th and Hamilton Sts., Philadelphia 30, Pa.

Air circuit breakers, Metal-enclosed bus, Metal-enclosed switchgear, Power switching equipment, Unit substations, Substation transformers, Oil circuit breakers, Panelboards, Safety switches, Distribution bus duct, Porcelain insulators, Rectifiers, Network analyzers, Low voltage current limiting fuses, Fusible entrance equipment, Meter boxes, Wire duct, Electromagnetic clutches.

*Branch Offices*

Calif., Los Angeles—1921 E. Seventh St. MA 2-7134

Calif., San Francisco—230 Ryan Way. PL 6-8660

Colo., Denver—655 Broadway Bldg., Rm. 410. AM 6-1404

*Representatives*

Ariz., Tucson—Central Station Equipment Co., 2223 Aviation Hwy. MA 3-2493

Mont., Butte—R. E. McDonough Co., 829 Maryland Ave. Phone 2-5447

Ore., Portland—Garland Affolter Engineering, 1233 N.W. 12th Ave. CA 3-7349

Utah, Salt Lake City—Riter Engineering Co., 1368 Major St. IN 7-9449

Wash., Seattle—Garland Affolter Engineering, 2603 Western Ave. MU 2-4950

**ITE CIRCUIT BREAKER CO.**, see BULLDOG ELECTRIC PRODUCTS DIV.

**JAEGER MACHINE CO.**, 550 W. Spring St., Columbus 16, Ohio

Air compressors (portable, stationary).

*Distributors*

Ariz., Phoenix—Western Machinery Co., 820 No. 17th Ave. AL 8-8531

Calif., City of Industry (Los Angeles)—Smith-Booth-Usher Co., 2200 So. San Gabriel River Pkwy. RA 3-9691; OX 2-7783

Calif., San Francisco—Edward R. Bacon Co., Folsom at 17th St. HE 1-3700

Colo., Denver—Western Machinery Co., 2400 W. Seventh Ave. TA 5-7151

Ida., Boise—Sawtooth Co., 1115 Grove St. Phone 3-3603

Mont., Butte—Butte Machinery Co., 510 E. Aluminum St. Phone 6324

Mont., Great Falls—Central Machinery Co., 721 Second St. So. GL 3-1806

Mont., Sidney—Tractor & Equipment Co., 201 No. Central. Phone 3.

Nev., Las Vegas—Cashman Equipment Co., 1132 Bonanza Rd. Phone 7400

N. Mex., Albuquerque—J. D. Coggins Co., 1717 Second St. N. W. CH 3-5505

Ore., Portland—Feenaughty Machinery Co., 112 S. E. Belmont St. BE 2-2186

Utah, Salt Lake City—Western Machinery Co., 2300 So. Main St. IN 6-8668

Wash., Seattle—A. H. Cox & Co., 1757 Second St. N. W. CH 3-5505

Wash., Spokane—Western Machinery Co., No. 808 Division St. FA 8-3240

Wyo., Cheyenne—Wortham Machinery Co., 517 W. 17th St. Phone 7-7766

**JANETTE ELECTRIC MFG. CO.**, Morton Grove, Ill.

Fractional, sub-fractional and integral hp. gear motors, Standard and heavy-duty speed reducers, Variable speed controls.

*Branch Office*

Calif., San Francisco—36 Second St. EX 7-6995

*Representatives*

Calif., Los Angeles—Electric Motor Engineering, Inc. WE 3-7591

Ore., Portland—Norman Rupp Co., 103 S.W. Front St. CA 8-4311

Utah, Salt Lake City—J. W. Reynolds Co., 1481 So. Main St. HU 4-1133

**JEFFREY MANUFACTURING CO.**, 920 No. Fourth St., Columbus 16, Ohio

Bearings (babbitted), Chains for drives (detachable link, roller), Clutches, Conveyors, Couplings (shaft), Crushers, Elevators (bucket), Feeders, Hoppers (truck), Pillow blocks, Pulleys, Sheaves and Sprockets.

*Branch Office*

Calif., Burlingame—1862 Rollins Rd. OX 7-5303

*Representatives*

Ariz., Phoenix—Cactus Ring & Chain, 424 W. Jefferson St.

Ariz., Phoenix—Edward D. Maltby, Inc., 424 W. Jefferson Ave.

Ariz., Scottsdale—Gen. Conveyor of Ariz., 478 No. Scottsdale Rd.

Calif., Eureka—Bearings & Transmission Products, 2930 Broadway, HI 2-5727

Calif., Long Beach—Edward D. Maltby, Inc., 2041 W. Anaheim

Calif., Los Angeles—Amercon Corp., 900 No. Alvarado

Calif., Los Angeles—Edward D. Maltby Co., Inc., 1940 So. Figueroa St.

Calif., Maywood—Bearings, Belts & Chains, Inc., 4035 E. 52nd St. LO 5-5304

Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251

Calif., Sacramento—Sacramento Engineering & Machine Works, 6th & X Sts. GI 3-1313

Calif., San Diego—Aztec Bearings & Chains Inc., 745 Fifteenth St.

Calif., San Francisco—Adam-Hill Co., Utah Ave. & Corey Way

Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500

Calif., San Francisco—General Conveyor Inc., 870 Market St. EX 7-0737

Calif., South Gate—Power Transmission & Equipment Co., 4501 Firestone Blvd.

Calif., Stockton—The Bearing Supply, 300 No. Wilson Way. HO 4-8588

Calif., Watsonville—Goodale Mfg. Co., 38 Menker St.

Colo., Denver—E. C. Horne Machinery Co., 1726 Champa St., Suite 315. TA 5-7015

Nev., Reno—Ind. Sales Service.

Ore., Portland—Northwest Chains & Sprockets, Inc., 31 N.W. First Ave. CA 8-3367

Utah, Salt Lake City—General Com. of Utah, 15 N.W. Temple St.

Wash., Seattle—Northwest Chains & Sprockets, Inc., 3628 E. Marginal Way. MA 8629

**JOHNS-MANVILLE**, 22 E. 40th St., New York, N. Y.

Conduits and fittings (electric), Insulations (industrial, electrical, building), Packings and friction materials, Panelboards (electric).

*Branch Offices*

Calif., Los Angeles—611 So. Catalina St. DU 5-0595

Calif., Oakland—430 40th St. PI 5-7323

Calif., San Francisco—116 New Montgomery St. DO 2-4353

Colo., Denver—1755 Glenarm Pl. KE 4-6378

Utah, Salt Lake City — 507 Dooly Bldg.  
EM 4-8446  
Wash., Seattle — 4304 Stone Way, ME 3-4300

## JOHNSON CORP., 805 Wood St., Three Rivers, Mich.

Rotary pressure joints, Compressed air separators and aftercoolers, Solenoid operated valves, Tank controls, Boiler water level controls, Pressure equalizing boiler feed pump, Instant steam water heater, Electrap for lifting, pumping and vacuum service.

### Representatives

Ariz., Phoenix—John Ladlow, P.O. Box 1784, BR 6-2371  
Calif., Los Angeles—Guy L. Warden & Sons, 209 W. 12th St.  
Calif., San Francisco — Calpacific Equipment Co., 50 Hawthorne St. GA 1-0697  
Colo., Denver—Thermal Industrial Engineering Co., Box 755, EA 2-1098  
Ore., Portland—E. S. Constant Co., 1814 S. E. Seventh Ave. BE 4-9774  
Utah, Salt Lake City—Pace-Turpin Co., 726 So. Third W. DA 2-5595  
Wash., Seattle—Arthur Forsyth Co., 2800 15th Ave. W. AL 5717

**JOHNSON GEAR & MFG. CO., LTD.**, 8th & Parker St., Berkeley 10, Calif. Gears (spur, herringbone, worm, helical, straight and spiral bevel), Racks, Sprockets, Gear drives (right angle) for deep well turbine pumps and industrial use.

## JOHNSON METAL HOSE, INC., 10 Sperry St., Waterbury 20, Conn.

### Representatives

Calif., Burlingame—W. P. Wooldridge Co., 1209 Burlingame Ave.  
Calif., Los Angeles—W. P. Wooldridge Co., 6440 Fleet St.

## JOY MANUFACTURING CO., Oliver Bldg., Pittsburgh 22, Pa.

Air compressors (portable, stationary), Conveyors and conveyor idlers, Motors (air).

### Branch Offices

Calif., Los Angeles—5426 E. Washington Blvd. RA 3-6305  
Calif., San Francisco—1155 Harrison St. HE 1-2446  
Colo., Denver—1626 Wazee St. KE 4-6334  
Utah, Salt Lake City—998 So. Sixth W St. DA 2-0481  
Wash., Seattle—2411 Western Ave. MU 2-2266

## KAHN & CO., INC., 541 Windsor St., Hartford 1, Conn.

Test and ground support equipment of hydraulic, pneumatic, electro-mechanical, electrical-electronic nature. Control apparatus in these fields. Electrical-electronic assemblies. Compressed gas dryers, dehydrators, dehumidifiers, desiccant reactivators. Missile pressurization rigs.

### Representatives

Calif., Emeryville—Peterson Co., 1466 66th St. OL 5-6374  
Calif., Los Angeles—Peterson Co., 3000 So. Broadway. RI 9-6151

## KAISER STEEL CORP., 300 Lakeside Dr., Oakland 12, Calif.

Iron, steel and rolled and fabricated steel products.

### Branch Offices

Ariz., Phoenix—213 No. First Ave. AL 4-2981  
Calif., Los Angeles—612 So. Flower St. MA 6-8211  
Calif., Oakland—285 17th St. CR 1-2211  
Colo., Denver—518 17th St. TA 5-6662  
Ore., Portland—610 Terminal Sales Bldg. CA 8-2383  
Wash., Seattle—2012 Exchange Blvd. MA 2-1574

## KATO ENGINEERING CO., 1415 First Ave., Monkato, Minn.

### Branch Office

Calif., Pasadena — 3151 E. Colorado St. MU 1-6526

## E. KEELER CO., 238 West St., Williamsport, Pa.

Water tube boilers (5000-200,000 lb. steam per hr., 160-750 lb. design pressure).

### Representatives

Calif., San Francisco—Bumstead-Woolford Co., 55 New Montgomery St. SU 1-6444  
Colo., Denver—Thermal Engr. Co., 1932 Cherry St. EA 2-1098  
Ore., Portland—Bumstead-Woolford Co., 320 S.W. Stark St. CA 8-6686

Utah, Salt Lake City—Pace-Turpin Co., 726 So. Third W. DA 2-5595  
Wash., Seattle—Bumstead-Woolford Co., 1411 Fourth Ave. MA 3-4915

## KERITE CO., 30 Church St., New York 7, N. Y.

Wire and cable (electric).

### Branch Office

Calif., Glendale — 3901 San Fernando Rd. CH 5-3721

### Representatives

Calif., Los Angeles — Robert A. Young & Co., 3901 San Fernando Rd. CH 5-3721

Calif., San Francisco—C. E. Ingalls & Sons, 681 Market St. GA 1-2916

Wash., Seattle — Fred W. Carlson Co., 1201 Dexter Ave. AT 4-4630

## KINGWELL BROS., LTD., 457 Minna St., San Francisco 3, Calif.

Bearings (sleeve).

### Branch Office

Calif., Los Angeles—4600 Pacific Blvd. LU 2-7427

### Representatives

Calif., Los Angeles—Almquist Bros., 2300 E. 49th St. LU 6-9111

Colo., Denver—Union Bearing & Transmission Co., 1622 Wazee St. CH 4-6061

Ore., Portland—Davis Industrial Products, 338 N.W. Sixth Ave. AT 6211

Utah, Salt Lake City—Metals Supply Co., Inc. 131 Social Hall Ave. EM 3-6727

Wash., Seattle—Industrial Products Co., 2911 First Ave. So. MA 7488

## KOEHRING CO., see HYDRAULIC PRESS MFG. CO.

## KOHLER CO., Kohler, Wis.

Engines, Generators (electric).

### Branch Offices

Calif., Los Angeles — 3458 Wilshire Blvd.

Calif., San Francisco — 570 Sutter St.

Wash., Seattle — 900 Tower Bldg.

### Distributors

Ariz., Phoenix — Nelson Electric Co., 1750 Grand Ave.

Ariz., Tucson — Nelson Equipment Co., 224 No. Fourth Ave.

Calif., Berkeley — West Coast Motors, 1077 Eastshore Hwy.

Calif., Fresno — Kellogg-Little Co., 2608 Tulare St.

Calif., Los Angeles—Generator Equipment Co., 3409-11 W. Jefferson Blvd.

Calif., Sacramento — Langner & Riskin, 1116-1122 15th St.

Colo., Denver—Waukesha Engine & Equipment Co., 4999 Jackson St.

Colo., Grand Junction — S & M Supply Co., 735 Fourth Ave.

Hawaii, Honolulu — Hawaiian Equipment Co., Ltd., 2880 Kilihiu St.

Ida., Boise — Intermountain Equipment Co., Broadway & Myrtle.

Mont., Butte — Hall-Perry Machinery Co., 812 E. Iron St.

Mont., Great Falls — C. B. Hanson, c/o Silver State Auto Co., 1013-1019 Central Ave.

Mont., Missoula — Hall-Perry Machinery Co., 1621 South Ave. W.

Nev., Reno — Auto Electric, 545 E. Fourth St.

N. Mex., Albuquerque—Contractors Equipment & Supply Co., 707 Broadway, N. E. N. Mex., Albuquerque—Hills Auto Electric Service, 415 Marquette Ave., N. W.

N. Mex., Farmington — Waukesha Engine & Equipment Co., 218 Airport Dr.

N. Mex., Hobbs — Waukesha Sales & Service, Inc., 308 W. Marlan.

Utah, Salt Lake City — Diesel Electric Service & Supply Co., 652 W. 17th St.

Wash., Seattle — Instrument Laboratory, Inc., 934 Elliott Ave. W.

Wash., Spokane — Intermountain Equipment Co., 611 E. Sprague.

Wyo., Casper — Casper Service & Supply Co., 307 So. Durbin St.

Wyo., Casper — Casper Supply Co., 444-448 So. Center St.

Wyo., Casper — Waukesha Engine & Equipment Co., 810 W. Yellowstone Rd.

Wyo., Cheyenne — Casper Supply Co., 1708 Pioneer Ave.

Wyo., Cody — Van's Supply.

Wyo., Laramie — Casper Supply Co., 311 So. Second St.

Wyo., Sheridan — Casper Supply Co.

Wyo., Worland — Casper Supply Co., 124 No. Eighth St.

## KUHLMAN ELECTRIC CO., 2565 E. Maple Rd., Birmingham, Mich.

Transformers (distribution, power, instrument, dry-type, load center, specialty).

### Branch Offices

Calif., Salinas—1056 Pellett Ave. HA 4-3936

(West Coast Plant)

Calif., San Francisco—870 Tennessee St. AT 8-6900

AT 8-6900

### Representatives

Ariz., Phoenix—Maydwell & Hartzell Sales & Engrg., Inc., 324 So. Second Ave. AL 2-5559

Calif., Los Angeles—Maydwell & Hartzell, Inc., 427 W. Fifth St. MA 8-7245

Calif., San Francisco—Maydwell & Hartzell, Inc., 870 Tennessee St. AT 8-6900

Colo., Denver—Sales Engineers Co., 211-212

Wazee Market. AC 2-4893

Ore., Portland—Maydwell & Hartzell, Inc., 2318 N.W. Vaughan, CA 8-4173

Wash., Seattle—Maydwell & Hartzell, Inc., 306 Dexter Ave. MA 4-2368

Wash., Spokane — Maydwell & Hartzell, Inc., 121 So. Monroe St. MA 4-3285

Wash., Seattle — Maydwell & Hartzell, Inc., 121 So. Monroe St. MA 4-3285

## LADISH CO., 5481 So. Packard Ave., Cudahy, Wis.

Pipe fittings, Corrosion resistant valves, Saw blades, Drop forgings, Rolled rings.

### Branch Offices

Calif., Los Angeles—3321 E. Slauson Ave. LU 3-4881

Calif., San Francisco—420 Market St. YU 2-6360

Colo., Denver—1700 Broadway. MA 3-5371

Wash., Seattle—314 Fairview Ave. No. MA 4-0747

## LAHER SPRING & TIRE CO., 2615 Magnolia St., Oakland, Calif.

Electric cars and trucks.

### Branch Offices

Calif., Los Angeles — 807 E. Eighth St. TR 3535

Ore., Portland — 15th & Davis. CA 7-1406

Utah, Salt Lake City — 541 So. State. EM 3-5871

Wash., Seattle — 714 E. Pike. EA 2-0366

## LAND-AIR, INC., 7444 W. Wilson Ave., Chicago 31, Ill.

Dry-type power transformers, Instrumentation, Monitoring, Atomic power stepping motors.

### Representatives

Ariz., Phoenix — R. E. Coulson Co., 8050 No. Third Ave.

Calif., Los Angeles — Electro-Mechanical Instruments, 4976 Eagle Rock Blvd.

Calif., Los Angeles — Stepper Motors, 1732 W. Slauson Ave.

Calif., Whittier — Power Electric Corp., 14540 Close St.

Utah, Salt Lake City — C. W. Silver Co., 550 W. Seventh St.

Wash., Seattle — Standard Elec. Sales, 204 W. Lucile St.

## LASSMAN, BENJAMIN, & SON, Route 8, Glenshaw, Pa.

Controls (hydraulic), Cylinders (hydraulic), Valves (hydraulic power line).

### Representative

Wash., Seattle — A. F. Woolsey, 84 Madison St. EL 7061

## LEAR, INC., 110 Ionia Ave. N. W., Grand Rapids, Mich.

Rotary and linear actuators, Servos, Servo systems, Remote vehicle controls, Screwjacks, Flexible drives, Power units, Synchros, Pickoffs.

### Branch Offices

Calif., Palm Alto—267-268 Town & Country Village. DA 1-1532

Calif., San Diego—3445 Fifth Ave. CY 8-4389

Calif., Santa Monica—3171 S. Bundy Dr. EX 8-6211

Wash., Seattle—Box 60, Boeing Field. PA 3-6174

## LEDEEN MANUFACTURING CO., 3340 No. Gilman Rd., El Monte, Calif.

Air compressors (portable, stationary), Clutches, Controls (compressed air, hydraulic), Couplings (shaft), Cylinders (air, hydraulic), Regulators (pressure), Valves (air power line, hydraulic power line).

### Representatives

Ariz., Phoenix—Lee Redman Equipment Co., P.O. Box 151, 610 So. 19th Ave. AL 8-3794

Calif., Bakersfield—Hopper Machine Works, P.O. Box 1226, 301 26th St. Phone 4-4991

Calif., El Monte—Eng. Prod. Co., 3350 No. Gilman Rd. CU 3-3163

Calif., Eureka—Eureka Boiler Works, Foot of S. HI 3-1681

Calif., Oakland—The Otrich Co., 3664 Grand Ave. TE 2-3781

## LEEDS & NORTHRUP—LINK-BELT

Calif., San Francisco—Rodman & Co., 420 Market St. YU 2-0824  
 Colo., Denver—Patten Engineering Co., 1745 Blake St., TA 5-3545  
 Hawaii, Honolulu—Hawaiian Equipment Co., Ltd., P.O. Box 2990, Phone 8-2921  
 Nev., Reno—Sierra Machinery Co., P.O. Box 1330, 307 Morrill Ave, Phone 2-6981  
 Ore., Eugene—American Steel & Supply Co., 44 7th Ave, E. Phone 5-0373  
 Ore., Medford—American Steel & Supply Co., P.O. Box 1346, Phone 2-7181  
 Ore., North Bend—Industrial Steel & Supply Co., P.O. Box 824, SK 9-2731  
 Utah, Salt Lake City—National Equipment Co., 101 W. 2nd So. St. EM 3-8776  
 Wash., Seattle—Standard Equipment Sales, 1231 First Ave. So. SE 1955  
 Wash., Spokane—General Machinery Co., P.O. Box 4227, Sta. B, E. 3500 Riverside Ave. KE 1535

### LEEDS & NORTHRUP CO., 4970

Stenton Ave., Philadelphia 44, Pa.  
 Economy dispatch computer controls, Combustion controls and general power plant instrumentation.

#### Branch Offices

Calif., Los Angeles—5111 Via Corona Ave. AN 9-3191  
 Calif., San Francisco—1095 Market St. MA 1-3464  
 Colo., Denver—1545 Glenarm Place. AC 2-1808  
 Utah, Salt Lake City—455 East 4th South. DA 8-8861  
 Wash., Seattle—1311 Republican St. MA 3-5505

### LELAND ELECTRIC CO. DIV., THE, AMERICAN MACHINE & FOUNDRY CO., 1501 Webster St., Dayton 1, Ohio

Generators (electric), Motors (electric).

#### Branch Office

Calif., Los Angeles—7046 Hollywood Blvd. HO 9-3639

#### Representatives

Calif., San Carlos—C. R. Dalton, Assoc., 132 El Camino Real.  
 Colo., Denver—Hubert Kaub & Co., 1025 Santa Fe Dr. MA 3-4606  
 Ore., Portland—J. E. Edstrom, 1224 S.W. Morrison St. CA 7-1702  
 Utah, Salt Lake City—Electric Sales Co., 818 E. 21st So. HU 5-0531

### LICON DIV., ILLINOIS TOOL WORKS, 6606 W. Dakin St., Chicago 34, Ill.

Precision electrical switches (limit, basic, toggle, hermatically sealed, subminiature).

#### Representatives

Calif., Arcadia—Ash M. Wood Co., P. O. Box 1158, CU 3-1201  
 Calif., Los Angeles—Graybar Electric Co., Inc., 210 Anderson St.  
 Calif., Los Angeles—H. G. Rising, Inc., 151 N. Vermont Ave.  
 Calif., Los Angeles—Universal Radio Supply Co., 1729 So. Los Angeles St.  
 Calif., Pasadena—Electronic Supply Corp., 2085 E. Foothill Blvd.  
 Calif., San Francisco—William J. Purdy Co., 312 Seventh St. UN 3-3300  
 Calif., San Jose—Peninsula TV & Radio Supply, 656 So. First St.  
 Colo., Denver—Electronic Component Sales, Inc., 645 So. Broadway, PE 3-7172  
 Wash., Bellevue—James Findlay Co., P.O. Box 717, GL 4-4519  
 Wash., Seattle—Farwest Trading Co., 209 First Ave. So.

### LINCOLN ENGINEERING CO. OF CALIF., 2844 So. Grand Ave., Los Angeles, Calif. RI 8-0151

Air compressors, Grease guns, Air line accessories, Hose reels (high, low, medium pressure), Motor oil pumps, Measuring valves, Hose (high pressure, hydraulic, air, grease).

#### Branch Offices

Calif., Berkeley—3033 San Pablo Ave. TH 8-6726  
 Ore., Portland—1018 S.E. 8th Ave. BE 4-7469

#### Distributors

Ariz., Flagstaff—Motor Supply Co., 13 No. Agassiz St.  
 Ariz., Phoenix—Colyear Motor Sales Co., 338 W. Adams  
 Ariz., Phoenix—Kerstiens Parts & Machine, 1324 So. Central Ave.  
 Ariz., Phoenix—Republic Supply Co., 405 E. Roosevelt St. AL 3-0184  
 Ariz., Tucson—Colyear Motor Sales Co., 123 No. Sixth Ave.  
 Ariz., Tucson—Motor Supply Co., 140 So. Sixth Ave.  
 Calif., Arcata—Arcata Auto Supply  
 Calif., Avenal—Republic Supply Co., 4th & Skyline Dr. Phone 251

Calif., Bakersfield—Republic Supply Co., P.O. Box 832, FA 7-8471  
 Calif., Bakersfield—Valley Auto Parts, 130 19th St.  
 Calif., Eureka—Humboldt Supply Co., 2029 Broadway, HI 2-6457  
 Calif., Fortuna—Fortuna Auto Supply  
 Calif., Fresno—Republic Supply Co., 155 Van Ness, Phone 2-7194

Calif., Fresno—Rol Pak Filter Service, 3036 Church St. Phone 2-6811

Calif., Huntington—Republic Supply Co., 1902 17th St. LE 6-4596

Calif., Long Beach—Republic Supply Co., 3080 Cherry Ave. NE 6-6042

Calif., Los Angeles—2600 So. Eastland Ave. PA 80-7151

Calif., Riverside—Allbright's, Eighth & Fairmount

Calif., Sacramento—Knapp Industrial Service, 515 12th St. HU 4-9208

Calif., Sacramento—Republic Supply Co., 1331 T St. HU 4-2807

Calif., San Bernardino—San Bernardino Motor Parts, Inc., Second & F Sts.

Calif., San Francisco—Paul & Griffin Co., 509 Sixth St. SU 1-4676

Calif., San Francisco—Wait Motor Supply, 234 7th St. HU 1-6116

Calif., San Jose—Republic Supply Co., 442 Park Ave. CY 5-3707

Calif., San Leandro—Republic Supply Co., 1919 Williams St. LO 2-0414

Calif., Santa Maria—Republic Supply Co., Hwy. 101 & Newlove Dr. WA 5-3657

Calif., Stockton—Hickinbotham Bros., 536 So. Aurora. Phone 5-9541

Calif., Taft—Republic Supply Co., 6th & Supply Row. Phone 5-4191

Calif., Ventura—Republic Supply Co., Ventura Ave. MI 3-6158

Ida., Boise—Intermountain Equipment Co., Broadway & Myrtle

Nev., Las Vegas—General Auto Parts, 900 So. Fifth St.

Ore., Portland—Burns Bros. Tire & Supply Co., 621 S.E. Union Ave.

Ore., Portland—Oil Filter Service Co., 615 S.E. Market St.

Wash., Seattle—Campbell Industrial Supply Co., 3433 Airport Way at Spokane St.

Wash., Seattle—Oil Filter Service Co., Inc., 1019 Westlake No.

Wash., Spokane—Intermountain Equipment Co., P.O. Box 2183

### LINE ELECTRIC CO., 271 So. Sixth St., Newark 3, N. J.

#### Relays

#### Branch Offices

Calif., Los Angeles—2234 W. 11th St. DU 9-3173

Calif., Palo Alto—1477 Dana Ave. DA 2-5232

Colo., Denver—645 So. Broadway.

Wash., Seattle—3028 First Ave. MU 2-6780

#### Distributors

Calif., Glendale—R. V. Weatherford Co., 6921 San Fernando Rd. TH 5-3551

Calif., Oakland—Brill Electronics, 610 E. 10th St.

Calif., Sacramento—Sacramento Electronic Supply Co., 1219 S St.

Calif., San Francisco—Television-Radio Supply Co., 1321 Mission St. KL 2-1216

Calif., San Jose—Peninsula Television Radio Supply, 656 So. First St.

Calif., San Jose—Schad Elec. Supply Co., Inc., 499 So. Market St.

Calif., Stockton—Dunlap Radio & TV Supply Co., 27 No. Grant St.

Calif., Sunnyvale—Sunnyvale Electronics, 534 So. Murphy

Nev., Reno—Radio Supply Co. of Nevada, 720 Tahoe St.

### LINK-BELT CO., Dept. 959-WI, Prudential Plaza, Chicago 1, Ill.

Backstops, Bases (motor), Bearings (babbitted, bronze, ball, roller, sleeve), Belting, drive (chain or link, rubber), Belts (timing), Belts V (rubber), Chains for drives (detachable link, roller, silent transmission, steel, cast ironless, promal), Clutches (friction and jaw), Collars (shaft), Couplings (shaft), Crank discs, Eccentrics, Fluid drives, Gear-motors, Gears (bevel, helical, worm), Gear drives (in-line helical, parallel shaft, worm), Hangers (shaft), Increasers (speed), Moto-gears, Motors (gear, variable speed), Pillow blocks, Pulleys, Reducers, speed (helical, gear, parallel shaft, motorized, shaft mounted, spur gear, worm and universal gear), Sprockets, Take-ups, Transmissions, variable speed, Variable speed drives.

*See advertisements on pages 14 & 15*

#### Plants, Warehouses or District Sales Offices

Calif., Los Angeles—P.O. Box 22056 (1200 Sycamore St., Montebello) RA 3-9341

Calif., San Francisco—400 Paul Ave. JU 7-6400

Colo., Denver—Schloss & Shubart, 1626 Wazee St. AC 2-2741

Ore., Portland—3030 N.W. Industrial St. CA 6-2601  
 Utah, Salt Lake City—108 So. Fourth W. St. DA 2-2339  
 Wash., Seattle—3405 Sixth Ave. So. SE 8200  
 Wash., Spokane—No. 1303 Washington St. FA 8-5820

#### Distributors

Ariz., Phoenix—Harris Bearing & Supply Co., 729 E. Henshaw, AL 8-8631

Ariz., Phoenix—Thunderbird Sales Corp., 2255 W. McDowell, AL 4-8874

Ariz., Prescott—Arizona General Supply Corp., P.O. Box 110, Phone 310

Calif., Anaheim—All Bearing Service, Inc., 264 N. Manchester Ave. KE 5-7259

Calif., Baldwin Park—Valley Industrial Supply Co., 5140 Rivergrade Rd. ED 8-7391

Calif., Colton—Valley Industrial Supply Co., 401 So. 8th St. TA 5-4342

Calif., El Centro—Valley Auto Supply, 633 State St. EL 2-3391

Calif., Eureka—Fred E. Barnett Co., Broadway & Harris Sts. Phone 2-3791

Calif., Fresno—Bearings Supply Co., 2933 Hamilton Ave. AD 2-7144

Calif., Long Beach—Barnes & Delaney, 2600 Atlantic Ave. GA 4-1601, NE 6-1785

Calif., Los Angeles—All Bearing Service, Inc., 5256 E. Washington Blvd. AN 1-3135

Calif., Los Angeles—General Bearings Co., 2017 Santa Fe Ave. TR 2338

Calif., Modesto—Geiger Iron Works, Grand & Willow Sts. LA 3-8387

Calif., Oakland—American Ball & Roller Bearing Co., 273 26th St. HI 4-8892

Calif., Oakland—Bearing Specialty Co., 2424 Webster St. GL 1-6528

Calif., Oakland—Hoffmeyer Supply Co., 541 E. Eighth St. TE 4-8636

Calif., Ontario—Valley Industrial Supply Co., Inc., 1170 W. Holt Blvd. YP 6-3827

Calif., Redding—Cascade Industrial Supply, Inc., Highway 99 So. Phone 1195

Calif., Sacramento—Geiger Iron Works, Inc., 2424 24th St. GL 1-7214

Calif., San Diego—Gould Hardware & Machinery Co., 2212 Main St. BE 2-6174

Calif., San Francisco—Bearings Specialty Co., 124 Texas St. HE 1-4140

Calif., San Francisco—Weiss-Howe-Emerson Co., Industrial Div., 750 Harrison St. SU 1-3662

Calif., San Jose—Orchard Supply Hardware, Industrial Div., 720 W. San Carlos St. CY 2-6282

Calif., Santa Cruz—Sweet Service Co., 504 Front St. GA 3-5697

Calif., Stockton—Geiger Iron Works, Inc., Scotts Ave. & Pilgrim St. HO 6-8623

Calif., Ukiah—Fred E. Barnett Co., North Highway 101, HO 2-6554

Calif., Van Nuys—So-Cal Bearing & Supply Co., 7251 Van Nuys Blvd. ST 5-5431, ST 3-2760

Calif., Watsonville—Sweet Service Co., 38 Alexander St. Phone 4-4775

Hawaii, Hilo—Hilo Iron Works, Box 987, Phone 2151

Hawaii, Honolulu—Honolulu Iron Works, 29 Nimitz Hwy. Phone 5-0961

Hawaii, Honolulu—Maguire Bearing Co., Ltd., 537 Ahui St. Phone 503-604

Ida., Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583

Ida., Pocatello—Transmission Products (Div. Parma Water Lifter Co.) Phone 2-2611

Ida., Pocatello—Western Bearings, Inc., 156 So. Third St. Phone 3518

Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W. Phone 4208

Mont., Billings—Bearings Supply Co., Inc., Second Ave. No. at 12th St. Phone 2-6641

Mont., Great Falls—Carl Weissman & Sons, 218 Fourth St. So. GL 3-0301

Mont., Missoula—Missoula Mercantile Co., 1600 Harker. Phone 9-4147

Nev., Reno—Sierra Industrial Co., Inc., 307 Morrill Ave. FA 3-1301

N. Mex., Albuquerque—Montezuma Bearings Co., 1413 First St. N.W. CH 7-0223

N. Mex., Farmington—Vance Supply Co.

N. Mex., Hobbs—Vance Supply Co., 211 S. Grimes St. EX 3-4416

Ore., Coos Bay—Bearing Supply Co., 894 Broadway, CO 7-4159

Ore., Coos Bay—Coos Bay Supply Co., 1023 So. Broadway CO 7-4111

Ore., Eugene—American Steel & Supply Co., 51 E. 7th St. Phone 5-0373

Ore., Eugene—Bearing Supply Co., 234 W. Sixth Ave. DI 5-5159

Ore., Klamath Falls—Fred E. Barnett Co. of Oregon, 600 Spring St. TU 4-5153

Ore., Medford—American Steel & Supply, Medford, Inc., 703 So. Grape St. ME 2-7181

Ore., Pendleton—A. W. Davis Supply Co., P.O. Box 676. Phone 761

Ore., Portland—Breeze Supply Co., 3321 N. W. Yeon Ave. CA 7-5447

Ore., Portland—Power Transmission Products (Div. Portland Iron Works), 1107 N.W. 14th Ave. CA 7-1271

Ore., Roseburg—Bearing Supply Co., 1338 S. E. Stephens

## LOGANSPORT — MARLIN-ROCKWELL

Ore., Rosebury—Douglas Supply Co., 649 N.E. Rose St. OR 3-6638  
 Ore., Salem—Stevens Equipment Co., 110 Division St. EM 4-2281  
 Utah, Price—H & J Supply Co., 540 S. Third St. W. Phone 1036  
 Utah, Salt Lake City—Industrial Supply Co., Inc., 121-133 Social Hall Ave. EM 3-6727  
 Utah, Salt Lake City—Utah Bearing Co., 626 S. W. Temple  
 Wash., Aberdeen—Grays Harbor Equipment Co., 419 So. F St. Phone 331, 397  
 Wash., Everett—Everett Trans. & Rubber Co., 2925 Rucker Ave. WA 6767, 1505  
 Wash., Hoquiam—Lamb—Grays Harbor Co., Pasco—Monarch Machine & Tool Co., 410 S. Oregon. LI 7-5701  
 Blaine & Firman Sts. HO 1000  
 Wash., Seattle—Bearing Engineering & Supply Co., 65 Horton St. MA 2744  
 Wash., Seattle—Industrial Products Co., 2911 First Ave. S. MA 2-7488  
 Wash., Spokane—Carter-Miller Mill Furnishing Co., No. 1320 Ash St. FA 7-6624  
 Wash., Tacoma—Gerrish Machinery Co., 1011 East E St. BR 2-3107  
 Wash., Walla Walla—Drumheller Co., 1 W. Alder St. WA 48  
 Wash., Wenatchee—Wells & Wade Hardware, 201-215 So. Wenatchee Ave. NO 2-7173  
 Wash., Yakima—Central Chain & Transmission Co., Inc., 709 So. First St. GL 7-6188  
 Wash., Yakima—Yakima Bearings Co., 709 So. First St. GL 7-6189  
 Wyo., Casper—Industrial Dist., Inc., Industrial Ave. at Spruce St. Phone 2-1575

**LOGANSPORT MACHINE CO., INC.**, 40 Payson Rd., Logansport, Ind.  
 Air and hydraulic components for industrial plants.

*Representatives*

Ariz., Phoenix—Southwest Machine Tool, 222 N. Seventh Ave. AL 3-4198  
 Calif., Los Angeles—Schumann Equipment Co., 5392 Alhambra Ave. CA 5-2468  
 Calif., Santa Clara—John Gertz, 360 Crestview Dr. CH 3-2043  
 Colo., Denver—Iver J. Esbenson Co., 1725 E. 17th St. EA 2-7733  
 Wash., Seattle—G. A. Stedman, 2339 Federal Ave. MU 2-1337

**LORD MFG. CO.**, 1635 W. 12th St., Erie, Pa.

Vibration control mountings, Shock mountings, Flexible couplings, Machinery mountings.

*Branch Offices*

Calif., Los Angeles—Suite 702, Hollywood Professional Bldg., 7046 Hollywood Blvd. HO 4-7598  
 Calif., San Francisco—Rm. 405-406, Columbus Tower Bldg., 918 Kearny St. EX 7-6280

**LOUIS ALLIS CO., THE**, 427 E. Stewart St., Milwaukee 1, Wis.

Standard and special electric motors (1-2,000 hp.), Gearmotors (1/3-150 hp.), Adjustable speed drives (1-200 hp.).

*Branch Offices*

Calif., Burlingame—1275 Rollins Rd. DI 2-4393  
 Calif., Los Angeles—4405 E. Olympic Blvd. AN 8-3621  
 Colo., Denver—2801 E. Colfax, Rm. 206. DU 8-3651  
 Ore., Portland—P. O. Box 7726. AT 4-2187  
 Utah, Salt Lake City—1719 S. Main St. HU 5-0531  
 Wash., Seattle—708 5th Ave. So. MU 5350

*See advertisement on page 10*

*Representatives*

Ariz., Phoenix—Daley Electric Co., 1825 E. Jefferson  
 Calif., Arcata—Humboldt Machine Works, 937 Tenth St. Phone 12  
 Calif., Burbank—Valley Equipment & Supply, 4391 So. Victory  
 Calif., Los Angeles—Sweinhart Electric Co., 2900 E. Olympic. AN 3-7456  
 Calif., Sacramento—Van Alstyne & Sons, 2512 Broadway. GL 7-9835  
 Calif., San Diego—Gould Hardware & Machine Co., 2212 Main St.  
 Calif., San Francisco—Atlas Electric Co., 617 7th St. KL 2-3676  
 Calif., San Francisco—Fred G. Guthrie, 420 Market St. EX 2-8296  
 Colo., Denver—Power Transmission Co., 4965 Jackson St. DU 8-1681  
 Colo., Denver—Ward Electric, 116 Tenth St. Colo., Denver—Weaver Electric, 1721 Larimer St. AL 5-5481  
 Ida, Lewiston—Jameson Machinery & Supply, 855 D St. Phone 3-4517

Mont., Billings—Great Northern Tool & Supply, 2224 Minneapolis Ave. Phone 2-2141  
 Mont., Great Falls—Mosch Electric Co., 10 Second St. So.  
 N. Mex., Albuquerque—Harry Cornelius, 1510 Second St. Phone 3-1776  
 N. Mex., Albuquerque—Technical Service Co., 730 Haines St. Phone 7-1508  
 Ore., Eugene—Electric Steel Foundry, 1464 W. 6th St. AT 2141  
 Ore., Portland—Stubbs Electric Co., 33 N. W. Park Ave. CA 7-5404  
 Utah, Ogden—Johnson Electric Co., 377 22nd St. Phone 9219  
 Wash., Yakima—Dodge Yakima Supply, 109 So. Front St. Phone 6495  
 Wyo., Casper—Electric Service, 1120 E. B St. Phone 2-7366

**LOVEJOY FLEXIBLE COUPLING CO.**, 4900 West Lake St., Chicago 44, Ill.

*Branch Offices*

Calif., Huntington Park—3370 Florence Ave. LU 2-6837  
 Calif., Oakland—600 16th St. TW 3-1577  
 Colo., Denver—Colorado Grange Bldg., 2475 W. 26th Ave. GR 7-1247  
 Wash., Seattle—822 First Ave. MA 7000

**LUFKIN FOUNDRY & MACHINE CO.**, Lufkin, Texas

Gear reducers, High speed increasers, Special types.

*Branch Offices*

Calif., Bakersfield—2500 Parker Lane. FA 7-3563  
 Calif., Los Angeles—5959 So. Alameda. LU 5-1201  
 Colo., Denver—1423 Mile High Center. AL 5-1616

*See advertisement on page 108*

Wyo., Casper—P. O. Box 1849. Phone 3-4670  
*Representatives*

Ore., Portland—Minder Chain & Gear, 307 S. E. Hawthorne. BE 6-1131  
 Wash., Seattle—Marine & Industrial Supply, Inc., 1123 W. Hanford St. MA 4-6926

**LUNKENHEIMER CO.**, Beekman St. and Waverly Ave., Cincinnati, Ohio  
 Iron, bronze, steel, plastic and special alloy valves; Cocks; Grease and oil cups; Gauges; Lubricators; Oils; Boiler mountings.

*Representatives*

Calif., Fullerton—L. Allen Barth, 1043 N. Highland Ave.  
 Calif., Los Angeles—Republic Supply Co., P.O. Box 2137, Terminal Annex  
 Calif., Newport Beach—Newton R. Crum, 2682 Crestview Dr.  
 Calif., Walnut Creek—Lawrence J. Bradford, 1610 Orchard Ln.  
 Calif., West Covina—Robert A. Miles, 213 Morris Ave.  
 Colo., Wheat Ridge—W. Britt Garrison, 4510 Ingalls  
 Ore., Oswego—Russell F. Miller, 13221 S. W. Knaus Rd.

**M-B PRODUCTS, INC.**, 46 Victor Ave., Detroit 3, Mich.

Filters (airline), Lubricators (airline), Air traps, Portable pneumatic grinders, Regulators (pressure).

*Representatives*

Calif., Glendale—Valley Engineers, 418 N. Glendale Ave.  
 Calif., Los Angeles—Almquist Brothers, 2300 E. 49th St.  
 Calif., Los Angeles—Willard Engineering Co., 2709 S. Hill St.  
 Calif., San Diego—Oil Filter Service, 2405 E. Harbor Dr.  
 Calif., San Francisco—Transmission Engr., 427 Bryant St.  
 Calif., Woodland Hills—Imperial Tool Co., 22464 Ventura Blvd. DI 8-3032  
 Ore., Portland—Hydraulic & Air Equipment, 2316 N. W. Savier St.  
 Wash., Seattle—H. F. Soderling Co., 1729 First Ave. So.

**MADDEN CORP.**, 1345 Jarvis Ave., Chicago 26, Ill.

Proportioning pumps, Continuous boiler blow-down systems.

*Representatives*

Calif., Los Angeles—Thermal Engineering & Equipment Co., 5469 San Fernando Rd. W. CH 5-3795  
 Calif., Los Angeles—Westco Pump Sales Co., 4621 Sheila St. AN 2-1155  
 Calif., San Francisco—Capacific Equipment Co., 50 Hawthorne St. GA 1-0697  
 Ore., Portland—R. M. Wade & Co., 1919 N.W. Thurman. CA 8-7383

**MALSBARY MFG. CO.**, 845 92nd Ave., Oakland 3, Calif.  
 Steam cleaners, Steam generators (boilers), Water heaters.

*Branch Offices*

Calif., Los Angeles—3923 W. Sixth St. DU 5-5089  
 Calif., Oakland—1030 Winsor Ave. GL 1-8742  
 Colo., Denver—2802 So. Race St. SK 6-5911  
 Mont., Billings—Industrial Supply Co., 14 N. 30th St. Phone 9-3296  
 Utah, Salt Lake City—Karl Winter Co., 61 E. Seventh St. EL 5-6275  
 Wash., Seattle—6057 35th Ave. N. E. LA 5-7435

*Representatives*

Ariz., Phoenix—Amka Chemical, Inc., 2229 No. 29th Ave. AP 8-0467

Ariz., Phoenix—Complete Auto Supply & Industrial Div., 501 W. Van Buren

Ariz., Tucson—Complete Auto Supply & Industrial Div., 530 N. Stone. MA 3-6701

Calif., Bakersfield—Diefel's, P. O. Box 3006. FA 4-9669

Calif., Delano—Green Motor Parts, 1124 High St.

Calif., Fresno—Haehl Equipment, 1903 No. Hwy. 99. Phone 3-8843

Calif., Hanford—Green Motor Parts, 216 E. Seventh St. LU 2-0431

Calif., Los Angeles—Pennsalt Chemical Corp., 2700 S. Eastern Ave. RA 3-9711

Calif., Los Angeles—Du Bois Co., 300 So. Mission Rd. AN 8-0141

Calif., Maywood—California Pacific Equipment Co., 6004 Walker. LU 5-0469

Calif., Modesto—Modern Chemical Co., 518 Virginia St. LA 2-0877

Calif., Oakland—L. D. Berlin, 600 16th St. TW 3-9720

Calif., Oakland—Vernon Chemical, 10406 Longfellow Ave. LO 9-5893

Calif., Oakland—S & M Service, 1083 98th Ave. LO 2-3561

Calif., Oakland—C. M. Ward & Co., 466 Crescent St. GL 2-1804

Calif., Palo Alto—Wilson Sales, 475 W. California Ave. DA 2-7468

Calif., Porterville—Green Motor Parts, 112 No. Main

Calif., Sacramento—Continental Chemical, 225 Almond. WA 5-3452

Calif., Sacramento—Henderson Bros., 1800 23rd St. GL 2-4561

Calif., Salinas—Lacy Auto Parts, 108 Monterey St. HA 4-2514

Calif., San Francisco—Edward R. Bacon Co., 2101 Folson St. HE 1-3700

Calif., San Diego—Westernlund & Lange, 1432 Union St. BE 2-0115

Calif., Stockton—Shop Equipment Supply, 1 E. Miner St. HO 4-0326

Calif., Tulare—Green Motor Parts, 145 No. K St. TU 6-3403

Mont., Billings—Hines Motor Supply, 14 No. 30th St.

Ore., Eugene—Jerry's Specialized Sales & Service, 1601 W. Second St. DI 5-0039

Ore., McMinnville—Davidson's Auto Parts, 1717 N. Baker St. Phone 1811, 2862

Ore., Medford—Witham Parts & Equipment, Fifth & Riverside. Phone 2-6159

Ore., Portland—Greater Mountain Chemical, 1919 S.E. Third Ave. GE 4-4060

Wash., Everett—Industrial Equipment, 2202 Everett Ave. AL 2-8123

Wash., Seattle—Automotive Steam Cleaners, 3231 Fourth Ave. So. MA 0762

Wash., Seattle—Ditto Equipment Co., 6747 Empire Way. EA 6848

Wash., Seattle—Hallidie Machinery, 210 Hudson St. LA 9520

Wash., Spokane—Modern Machinery Co., E. 4412 Trent Ave. KE 9353

Wash., Walla Walla—Campbell's Industrial Cleaning, 123 E. Alder. JA 5-2950

**MANNING, MAXWELL & MOORE, INC.**, E. Main St., Stratford, Conn.  
 Gauges, Valves, Thermometers, Temperature regulators, Transmitters, Dead weight testers, Electronic process control instruments.

*Branch Offices*

Calif., Los Angeles—1320 Rio Vista Ave. AN 3-6133

Calif., San Francisco—450 Bayshore Blvd. MI 8-4305

*Representative*

Utah, Salt Lake City—Lang Co., P. O. Box 479. DA 8-8341

**MARLIN-ROCKWELL CORP.**, 402 Chandler St., Jamestown, N. Y.

Bearings (ball, roller), Pillow blocks.

*Branch Offices*

Calif., San Francisco—1234 Mariposa St. KL 2-3437

Colo., Denver—729 Broadway. AL 5-4651

*Representatives*

Ariz., Phoenix—Edward D. Maitby Co., 424 W. Jefferson. AL 4-9227

## MASON-NEILAN—MONARCH ELECTRIC

Calif., Anaheim—Edward D. Maltby Co., 1520 W. Lincoln Ave. PR 4-9292  
 Calif., Long Beach—Edward D. Maltby Co., 2041 W. Anaheim St. HE 7-1808  
 Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa St. RI 7-0181  
 Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LU 2-5304  
 Calif., San Diego—Edward D. Maltby Co., 745 15th St. BE 3-7278  
 Ore., Portland—Brown Bearing Co., 715 N. E. Davis St. BE 2-6188  
 Wash., Seattle—Brown Bearing Co., 2440 First Ave. So. MA 2404  
 Wash., Spokane—Brown Bearing Co., W. 1711 Trent Ave. KE 5-3093

**MASON-NEILAN**, a div. of **WORTHINGTON CORP.**, Norwood, Mass.  
 Controllers (liquid level), Control instruments, Valves (diaphragm control, pressure regulating).  
**Branch Offices**  
 Calif., Los Angeles—2822 E. Olympic Blvd. AP 1-1418  
 Calif., San Francisco—525 Market St. EX 7-0550

### Representatives

Ariz., Phoenix—George S. Thompson Co., 915 So. Central Ave.  
 Ore., Portland—Fryer & Co., Inc., 2035 S.W. 58th Ave.  
 Utah, Salt Lake City—Denver Fire Clay Co., 225 W. South Temple. Phone 4-5565

**MCDONNELL & MILLER, INC.**, 3500 No. Spaulding Ave., Chicago 18, Ill.  
 Boiler water level controls, Safety devices.

### Branch Office

Calif., Los Angeles—315 W. Ninth St. MA 5-1525

### Representatives

Calif., San Francisco—Eric Roberts, 417 Market St. GA 1-3710  
 Ore., Portland—Larry Harrington Co., Inc., 1980 N. W. Lovejoy. CA 8-4324  
 Wash., Seattle—Larry Harrington Co., Inc., 405-A East 45th St. ME 2-3300

**MCGILL MFG. CO.**, No. Lafayette St., Valparaiso, Ind.

Cam followers, Needle roller bearings, Electrical specialties.

### Representatives

Calif., Los Angeles—J. G. Pomeroy Co., 1004 E. Fourth St. MA 1105  
 Calif., San Francisco—George A. Gray Co., 2720 17th St. HE 1-1526  
 Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St. CA 3-6301  
 Wash., Seattle—Bearing Sales & Service, 2908 Sixth Ave. So. MU 0331

**MCGRAW-EDISON CO.**, see BUSSMANN MANUFACTURING DIV.

**MCGRAW-EDISON CO.**, see EDISON, THOMAS A., INDUSTRIES

**MECHANICAL AIR CONTROLS, INC.**, 10030 Capital (Oak Park), Detroit 37, Mich.

Valves (air power line).

### Representatives

Calif., Oakland—Rucker Co., 4700 San Pablo Ave., OL 3-5221  
 Calif., South Gate—Rucker Co., 4956 Firestone Blvd. LO 4-2521  
 Ore., Portland—Rucker Co., 1633 N. W. 21st Ave. CA 3-0205  
 Wash., Seattle—Rucker Co., 1000 Fourth Ave. So. MA 2783

**MECHANICAL PRODUCTS, INC.**, 1824 River St., Jackson, Mich.  
 Circuit breakers.

### Branch Office

Calif., Burbank—1226 W. Olive Ave. TH 2-1921

### Representatives

Calif., Los Angeles—Agencies Co., 836 Traction Ave. MI 1925  
 Calif., San Francisco—Arthur & Allen, 420 Market St. YU 2-3483

**MERCOID CORP., THE**, 4201 Belmont Ave., Chicago 41, Ill.

Mercury switch equipped automatic controls for pressure, differential pressure, temperature, liquid level, mechanical movement, Relays and hermetically sealed mercury contact switches.

### Representatives

Calif., Los Angeles—Jensen Instrument Co., 1919 W. Beverly Blvd.  
 Calif., San Francisco—Jensen Instrument Co., 429 Bryant St.  
 Colo., Denver—J. M. Warner, 600 W. 48th St.

Ore., Portland—Johnson Heating Supply Co., 232 N.E. 9th Ave.  
 Utah, Salt Lake City—Stevens Sales Co., 1482 Major St.  
 Wash., Seattle—E. H. Langdon Co., 72 Vine St.

**MICRO SWITCH, a div. of MINNEAPOLIS-HONEYWELL REGULATOR CO.**, Freeport, Ill.

Switches (automatic, electric).

### Branch Offices

Ariz., Phoenix—4125 N. Seventh Ave. CR 4-7791  
 Calif., Los Angeles—6620 Telegraph Rd. RA 3-7104  
 Calif., San Francisco—2 Dorman Ave. AT 8-1221  
 Colo., Denver—1600 W. 13th Ave. AM 6-2481  
 Wash., Seattle—401 Pontius Ave. No. MU 4580

### Distributors

Ariz., Phoenix—Electric Supply, Inc., 202 S. 7th Ave. AL 2-2343  
 Calif., Arcata—Industrial Electric Service Co., 980 Fourth St.  
 Calif., Fresno—Electric Motor Shop, 253 Fulton St. Phone 3-1154  
 Calif., Glendale—Air Associates, Inc., 1231 Air Way. CL 4-4151  
 Calif., Los Angeles—Andrews Hardware & Metal Co., 334 S. Main St. MU 6111  
 Calif., Los Angeles—Radio Products Sales, Inc., 1501 S. Hill St. PR 7471  
 Calif., Los Angeles—Radio Television Supply Co., 2025 S. Figueroa. RI 8-7131  
 Calif., Oakland—Western Electro-Mechanical Co., Inc., 300 Broadway. TE 2-8653  
 Calif., Sacramento—Norcal Electronics, Inc., 1115 R St. GI 3-4668  
 Calif., San Bernardino—Tri-County Electrical Wholesalers, 483 So. I St. Phone 7896  
 Calif., San Diego—Pacific Wholesale Electric Co., 702 State St. BE 4-5136  
 Calif., San Francisco—C. J. Hendry Co., 27 Main St. DO 2-4242  
 Calif., San Francisco—Phillips & Edwards Electric Corp., 265 Vermont. HE 1-7400  
 Calif., San Jose—Frank Quenmont, Inc., 161 W. San Fernando St.  
 Colo., Denver—Ryall Electric Supply Co., 500 Lincoln St. AC 4-5221  
 Ore., Eugene—Tillman & Booth, Inc., 215 W. Fifth Ave. Phone 5-3301  
 Ore., Portland—North Coast Electric Co., 625 N. W. Everett St. CA 8-5111  
 Utah, Salt Lake City—Stuart Electric, 13 Kensington Ave. HU 5-5424  
 Wash., Aberdeen—Industrial Electric Service Co., 319 S. First. Phone 956  
 Wash., Seattle—North Coast Electric Co., 171 Jackson St. MU 4444  
 Wash., Spokane—Columbia Electric & Mfg. Co., 3420 Ferry Ave. KE 0611  
 Wash., Tacoma—Love Electric Co., 1914 Market St. BR 4101

**MIDLAND-ROSS CORP.**, see ROSS, J. O., ENGINEERING, a div.

**MINDER, J. W., CHAIN & GEAR CO.**, 6011 So. Central Ave., Los Angeles 1, Calif. AD 3-7221

Transmission equipment (mechanical power).

### Branch Offices

Ore., Portland—307 S.E. Hawthorne Blvd. BE 6-1131  
 Ore., Salem—1515 13th St. S. E. JU 1-2437

**MINIATURE PRECISION BEARINGS, INC.**, Precision Park, Keene, N. H.

Miniature ball bearings.

### Branch Office

Calif., Los Angeles—6214 W. Manchester Ave. OR 8-5329

### Representatives

Calif., Fresno—Geo. M. Philpott Co., Inc., 2376 S. Railroad Ave. AM 6-9843  
 Calif., Long Beach—E. D. Maltby Co., Inc., 2041 W. Anaheim St. HE 7-1808  
 Calif., Los Angeles—E. D. Maltby Co., Inc., 1940 S. Figueroa St. RI 7-5611  
 Calif., Maywood—E. D. Maltby Co., Inc., 4035 E. 52nd St. LU 2-5304  
 Calif., Oakland—Geo. M. Philpott Co., Inc., 2929 Poplar. GL 2-0458  
 Calif., Sacramento—Geo. M. Philpott Co., Inc., 6260 Folsom Blvd. GL 2-2641  
 Calif., San Diego—E. D. Maltby Co., Inc., 745-15th St. BE 3-7278  
 Calif., San Francisco—Geo. M. Philpott Co., Inc., 1060 Bryant St. HE 1-5475  
 Colo., Denver—Bearings Service & Supply, 4433 Claude Ct. AC 2-5991  
 Ore., Portland—Bearing Sales & Service, Inc., 1645 N. W. Hoyt St. CA 3-6301  
 Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331

**MINNEAPOLIS - HONEYWELL REGULATOR CO.**, see MICRO SWITCH, a div.

**MINNESOTA RUBBER CO.**, 3630 Wooddale Ave., Minneapolis 16, Minn.

Molded rubber products, Quad-Rings, O-Rings, Kapsels.

### Branch Office

Calif., Tarzana — 18633 Ventura Blvd. DI 4-0239

### Representatives

Colo., Denver C.F.L. Co., 1871 So. Broadway. SP 7-4381  
 Ore., Portland — Northwest Industrial Sales Co., 213 N. W. Tenth Ave. CA 3-1543

**MODERNAIR CORP.**, 400 Preda St., San Leandro, Calif.

Controls (compressed air, hydraulic), Cylinders (air, hydraulic), Valves (air power line, hydraulic power line).

### Representatives

Ariz., Phoenix—Air-Draulics Co., 3135 No. 29th Ave. AL 8-6441

Calif., Burbank—Elect-Air Tool Co., 310 W. Verdugo Ave.

Calif., Fresno—Valley Foundry & Machine Works, 2510 S. East Ave.

Calif., Los Angeles—Airdreco, 4863 Telegraph Rd.

Calif., Los Angeles—Huddleston Equipment Co., 1148 So. Los Angeles St.

Calif., Oakland—The H. E. Linney Co., 5801 College Ave.

Calif., Redding—Gerlinger Steel Supply Co., 1527 Sacramento St.

Calif., Sacramento—Capital Machine & Welding Co., 63 No. 17th St.

Calif., San Diego—Hoffer Eng. Co., 2015 Main St.

Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St. UN 3-5010

Calif., San Francisco—Power-Mac Co., 467 Van Ness Ave.

Calif., San Jose—Orchard Supply Hardware, 720 W. Carlos St.

Calif., Ukiah—Klamath Machine & Locomotive, Denver—Martha Machinery, Inc., 4426 Vine St.

motive Works of California, 720 State St. Colo., Denver—Plant Equipment Co., 1863 Wazee St.

Ore., Portland—Western Machinery Corp., 1035 S.E. 9th St.

Utah, Salt Lake City—Robert Taylor & Sons, P. O. Box 1223

Wash., Seattle—F. H. Soderling Co., 1729 First Ave. So.

Wash., Tacoma—Webster-Robinson Machinery, Puyallup Ave. at A St.

**MOLONEY ELECTRIC CO.**, 5390 Birch Blvd., St. Louis 20, Mo.

Transformers (power, distribution, load tap changing, regulating, network, subway, dry type, series street lighting), Step voltage regulators, Primary and secondary unit substations.

### Representatives

Ariz., Phoenix—Daley Electric Sales Co., P. O. Box 12217. AL 2-2326

Calif., Los Angeles—Garland-Affolter Engineering Corp., Subway Terminal Blvd. MA 4-1864

Calif., San Francisco—Garland-Affolter Engineering Corp., 58 Sutter St. EX 7-1800

Colo., Denver—Hamilton Associates, 1236 Elati St. CH 4-1505

Mont., Butte—R. E. McDonough Co., P. O. Box 278. Phone 2-5447

N. Mex., Clovis—A. W. Graham, P. O. Box 69, PO 3-4244

Ore., Portland—Garland-Affolter Engineering Corp., 1233 N. W. 12th St. CA 3-7349

Utah, Salt Lake City—Riter Engineering Co., P. O. Box 2187. IN 7-9449

Wash., Seattle—Garland-Affolter Engineering Corp., 2603 Western Ave. MU 2-4950

**MONARCH ELECTRIC CORP.**, 118 E. First St., Jamestown, N. Y.

Renewable fuses (0-600 amp., 250-600 v.), Non-renewable fuses, Plug fuses, Fusets and adaptors, Fuse clips.

### Representatives

Calif., Los Angeles—Hayjax Co., 436 Colton St. MA 8-6279

Calif., San Francisco—Keeler, White Co., 615 Seventh Ave. HE 2900

Colo., Denver—A. J. Nelson Co., 1639 Blake. KE 4675

Ore., Portland—Keeler, White Co., 322 N. W. Fourth Ave. CA 7-0593

Wash., Seattle—Keeler, White Co., 1041 Sixth Ave. So.

## MORGANITE—OPW-JORDAN

**MORGANITE, INC.**, 33-02 48th Ave., Long Island City, N. Y.  
Bearings (slieve).

*Representatives*

Calif., Novato—M. R. Johnson, 1415 W. Court, TW 2-3379  
Calif., Santa Monica—W. O'Connor, 1530 Seventh St.

**MORSE CHAIN CO.**, Ithaca, N. Y.  
Chain (silent, roller, Hy-Vo), timing belts, speed reducers, Clutches, Couplings, Sprockets.

*Branch Offices*

Calif., Los Angeles—5011 Telegraph Rd. AN 8-9141  
Colo., Denver—1408 W. Colfax Ave. AL 5-8609

**See advertisements on pages 50 & 51**

*Representatives*

Calif., San Francisco—Adam-Hill Co., 142 Utah Ave. PL 5-3935  
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271  
Wash., Seattle—Chain Gear, Inc., 820-824 First Ave. So. MA 2-7000

**MOTOR GENERATOR CORP.**, West Water St., Troy, Ohio

Automatic battery charging equipment for industrial truck batteries, to meet all applications; Automotive type battery chargers.

*Representatives*

Ariz., Phoenix—Toncray Equipment Co., 213 No. First Ave. AL 4-1363  
Calif., La Jolla—Frank T. Butler, 722 Fern Glen, GL 4-6757  
Calif., Los Angeles—Fred Pelletier Co., 1014 Venice Blvd. RI 9-4471  
Calif., San Francisco—McCormick-Morgan Co., 324 Fifth St. SU 1-6591  
Colo., Denver—Toncray Equipment Co., 1732 Blake St. CH 4-1102  
Ore., Beaverton—Richard G. Carnahan, 1218 S. W. Erickson.  
Utah, Salt Lake City—Toncray Equipment Co., 1347 So. 17th E. IN 6-9186; 2577  
Wash., Seattle—Joseph C. Platt Co., 111 Bell St. EL 6141  
Wash., Spokane—Automotive Electric Co., E. 125 Mission Ave. FA 5-5379

**MPB, INC.**, see **SPLIT BALLBEARING CORP.**, a div.

**NATIONAL CARBON CO.**, a div. of **UNION CARBIDE CORP.**, 30 E. 42nd St., New York 17, N. Y.

Batteries (dry cell), Brushes for electric motors and generators.

*Branch Office*

Calif., San Francisco—22 Battery St. YU 2-1360

**NATIONAL ELECTRIC DIV.**, H. K. PORTER CO., INC., Porter Bldg., Pittsburgh 19, Pa.

Conduits and fittings, Ducts (bus and wiring), Wire and cable (electric).

*Branch Offices*

Ariz., Phoenix—3330 E. Georgia St. CR 4-0106  
Calif., Fresno—2824 E. Robinson St. BA 2-1734  
Calif., Los Angeles—6400 Corvette St. RA 3-4654  
Calif., San Francisco—400 Potrero Ave. UN 1-1145  
Colo., Denver—455 W. Wesley Ave. PE 3-3741  
Utah, Salt Lake City—19 W. S. Temple. DA 2-2701  
Wash., Seattle—1048 Sixth Ave. So. MA 3-3775

**NATIONAL SEAL DIV.**, Broadway at National Ave., Redwood City, Calif. Oil and grease seals, Laminated shims, O-rings, Silicone molded products.

*Branch Offices*

Calif., Downey—11634 Patton Rd. TO 2-8163  
Colo., Denver—855 Inca St. AM 6-0547

**NATIONAL SUPPLY CO.**, see **SPANG-CHALFANT DIV.**

**NATIONAL-U. S. RADIATOR CORP.**, 221 Central Ave., Johnstown, Pa. Boilers.

*Branch Offices*

Calif., Los Angeles—3301 Medford St. AN 1-9147

Calif., San Francisco—57 Page St. UN 3-2932

**NATIONAL U. S. RADIATOR CORP.**, see also **CYCLOTHERM DIV.**

**NEW YORK AIR BRAKE CO.**, see **HYDRECO DIV.**

**NICE BALL BEARING CO.**, 30th and Hunting Park Ave., Philadelphia 40, Pa.

*Ball bearings, Retainers, Sheaves.*

*Distributors*

Ariz., Phoenix—Garrett Supply Co.  
Ariz., Phoenix—Edward D. Maltby Co., Inc.  
Calif., Antioch—Bearing Supply  
Calif., Fresno—General Bearings Co.  
Calif., Long Beach—Edward D. Maltby Co.  
Calif., Long Beach—Pacific Bearings Co.  
Calif., Los Angeles—Andrews Hardware & Metal Co.  
Calif., Los Angeles—Bearing Sales Co.  
Calif., Los Angeles—Bearing Specialty Co.  
Calif., Los Angeles—Garrett Supply Co.  
Calif., Los Angeles—Edward D. Maltby Co., Inc.  
Calif., Los Angeles—Pacific Bearings Co.  
Calif., Maywood—Bearing Specialty Co.  
Calif., Maywood—Edward D. Maltby Co., Inc.  
Calif., Oakland—Bearing Engineering Co.  
Calif., Oakland—Bearing Specialty Co.  
Calif., Sacramento—Bearing House  
Calif., Sacramento—Bearing Specialty Co.  
Calif., San Bernardino—Pacific Bearings Co.  
Calif., San Diego—Edward D. Maltby Co., Inc.  
Calif., San Francisco—Bearing Engineering Co.  
Calif., San Francisco—Bearing Specialty Co.  
Calif., San Francisco—C. W. Marwedel  
Calif., San Jose—Masterson Bearing Co.  
Calif., San Leandro—Republic Supply Co. of Calif.  
Calif., Stockton—Bearing Supply Co.  
Colo., Denver—Bearings Service & Supply Co.  
Colo., Denver—Western Belting Co.  
Ida., Boise—Western Bearings, Inc.  
Ida., Pocatello—Western Bearings, Inc.  
Ida., Twin Falls—Western Bearings, Inc.  
Ore., Eugene—Bearing Sales & Service, Inc.  
Ore., Portland—Bearing Sales & Service, Inc.  
Ore., Portland—J. E. Haseltine & Co.  
Ore., Roseburg—Bearing Sales & Service, Inc.  
Utah, Salt Lake City—Bearings Service & Supply  
Utah, Salt Lake City—Industrial Supply Co., Inc.  
Wash., Aberdeen—Bearing Sales & Services, Inc.  
Wash., Everett—Bearing Sales & Service, Inc.  
Wash., Longview—Bearing Sales & Service, Inc.  
Wash., Pasco—Bearing Sales & Service, Inc.  
Wash., Port Angeles—Bearing Sales & Service, Inc.  
Wash., Seattle—Bearing Sales & Service, Inc.  
Wash., Seattle—J. E. Haseltine & Co.  
Wash., Seattle—Cragin & Company  
Wash., Spokane—J. E. Haseltine & Co.  
Wash., Tacoma—Bearing Sales & Service, Inc.

**NORGREN, C. A., CO.**, 3400 So. Elati, Englewood, Colo.

Equipment for processing compressed air, Filters, Pressure regulators, Lubricators (air tools, air cylinders, other air operated equipment and machine components), Relief valves, Flow control valves, Needle valves.

*Representatives*

Ariz., Phoenix—Air-Draulics Co., 3135 N. 29th Ave. AL 8-6441  
Calif., Burlingame—Airdraulic Ind. Prod. Co., 1104 Carolan Ave. DI 2-7297  
Calif., South Pasadena—Teglen Engineering Co., 1942 Huntington Dr. MU 2-2856  
Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1253  
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271  
Wash., Seattle—George W. Wardon Co., 1305 Dexter Ave. AT 3-0622, -1441

**NUMATICS, INC.**, Highland, Mich. Air control valves.

*Representatives*

Calif., Oakland—Ditzén Engineering & Sales Co., 6002 Telegraph Ave. OL 3-8262  
Calif., No. Hollywood—Numatic Engineering, 11224 Burbank Blvd. ST 7-0114  
Wash., Seattle—Langlois Air & Hydraulic Co., 500 Wall St. MU 3918

**OHIO CARBON CO.**, 12508 Berea Rd., Cleveland 11, Ohio

Motor, generator brushes (carbon, graphite, metal graphite), Self lubricating bearings (carbon, graphite).

*Representatives*

Calif., Los Angeles—Tri State Supply, 544 So. San Pedro, MU 2354  
Calif., San Francisco—Tri State Supply, 554 Bryant St.  
Colo., Denver—Hendrie & Bolhoff Co., 1635 17th St.  
Wash., Seattle—Tri State Supply, 318 Occidental

**OHIO GEAR CO.**, 1333 E. 179th St., Cleveland 10, Ohio.

Gearmotors, Gears (bevel, helical, spur), Gears (worm), Increasers (speed), Sprockets.

*Representatives*

Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 S. Central, AD 3-7221  
Calif., So. San Francisco—Adam-Hill Co., 142 Utah Ave. PL 5-3935  
Ore., Portland—J. W. Minder Chain & Gear Co., 307 S. E. Hawthorne Blvd. BE 6-1131  
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. MA 3-5650

**OILGEAR CO., THE**, 1560 W. Pierce St., Milwaukee 4, Wis.

Fluid power cylinders, motors, pumps, transmissions and valves.

*Branch Offices*

Calif., Los Angeles—5327 Santa Monica Blvd. HO 5-3943  
Wash., Seattle—914 Arctic Bldg. MA 7445

**OKONITE CO., SUBSIDIARY OF KEN-NECOTT COPPER CORP.**, 220 Passaic St., Passaic, N.J.

Wire and cable (electric).

*Branch Offices*

Calif., Los Angeles—427 West 5th St. MA 4-9677  
Calif., San Francisco—701 Phelps St. VA 4-7474  
Ore., Portland—880 Pittock Block. CA 8-3173  
Wash., Seattle—1101 Securities Bldg. MA 4-5277

**ONAN, D. W., & SONS, INC.**, 2515 University Ave. S.E., Minneapolis 14, Minn.

Gasoline and diesel engines and accessories. Electric generating plants (gasoline and diesel), controls and accessories.

*Branch Offices*

Calif., Palo Alto—1588 Edgewood Dr. DA 2-0127  
Colo., Denver—2800 Tennyson, GL 5-6786  
Ore., Portland—401 S.E. 50th Ave. BE 6-2801

*Distributors*

Ariz., Nogales—Commercial Dist., Arroyo and Elm St.  
Ariz., Phoenix—Equipment Sales Co., 720 South 19th Ave.  
Calif., San Francisco—Ets-Hokin & Galvan, 551 Mission St.  
Colo., Denver—B. K. Sweeney Co., 1601 23rd St.  
Mont., Billings—Great Northern Tool & Supply Co., 2224 Minnesota Ave.  
Mont., Great Falls—Brack Motor Supply, 104-106 First Ave. So.  
Nev., Reno—Air Service Co., 241 So. Virginia St.  
N. Mex., Albuquerque—Industrial Supply Co., 1647 Second St. N.W.  
Ore., Portland—Electrical Const. Co., 2121 N. W. Thurman  
Utah, Salt Lake City—Motor Mercantile Co., 54 W. Seventh St.  
Wash., Seattle—Fremont Electric Co., 944 No. 34th St.  
Wyo., Casper—Power Service Co., 335 So. Ash St.

**OPW-JORDAN**, 6013 Wiehe Rd., Cincinnati 13, Ohio.

Controls (air compressor, automatic, compressed air, gas, steam, temperature, pressure, valve), Reducers (pressure), Regulators (air, steam, water, hazardous liquids), Valves (check, foot, automatic, gate, globe, poppet, pressure and temperature regulation).

*Branch Offices*

Calif., Los Angeles—727 W. Seventh St. TU 4630  
Colo., Denver—10 S. Cody St. BE 7-4344

*Representatives*

Ariz., Tucson—Blackmore Sales Co., 2020 E. 13th St. MA 4-2475  
Calif., Los Angeles—Dawn Associates, 3263 Independence Ave. LO 7-7775  
Ore., Portland—L. H. Kaeser Co., 1306 N. W. Hoyt St. CA 8-8591

## ORANGEBURG — POWERS

Utah, Salt Lake City—Power Engineering Co., 1806 S. State St. IN 7-6838

**ORANGEBURG MFG. CO., A DIV. OF FLINTKOTE CO.**, 375 Park Ave., New York 22, N.Y.

Fibre conduit for use as protective raceway for underground electric and communication cables.

*Branch Offices*

Calif., Santa Ana—12322 Cinnebar Rd. Wash., Seattle—101 Jones Bldg.

*Representatives*

(Sold throughout the West at all General Electric Supply Co. and Graybar Electric Supply Co. branches)

**ORR & SEMBOWER, INC.**, Morgantown Rd., Reading, Pa.

Automatic packaged boilers, steam and hot water (15-500 hp.). Complete automatic lumber kiln units, Power-Pak boilers (15-25 hp.).

*Representatives*

Ariz., Phoenix—Cone & Wallace Co., 1325 S. 26th St. BR 5-4496 Calif., Los Angeles—Thermal Eng. & Equipment Co., 5469 San Fernando Rd. W. CH 5-3795 Calif., Oakland—Brose Co., 414 Santa Clara Ave. TE 2-4873 Ida., Boise—Richardson Equipment Co., 612 Front St. Phone 3-9431 N. Mex., Albuquerque—Barnhart & Dwyer, 2500 Garfield S. E. Ore., Portland—Ponder Oil Burner Co. 309-15 N. E. Wygant AT 8-4500 Utah, Salt Lake City—Todd Machinery Co. 140 W. Second So. DA 2-4663 Wash., Seattle—Superior Engineering Co. 15th & E. Madison. CA 3300

**PANDUIT CORP.**, 14461 Waverly Ave., Midlothian, Ill.

Plastic wiring duct, Cable clamps, Ties.

*Representatives*

Ariz., Phoenix—E. F. Howe, P. O. Box 10152. AM 5-9185 Calif., Los Angeles—California Wholesale Electric Co., 2548 Yates Ave. RA 3-7131 Calif., Los Angeles—Walter Corman, 7432 W. 80th St. OR 4-5833 Calif., San Diego—Coast Electric Co., 744 G St. Calif., San Francisco—Campbell & George Co., 1601 Cortland Ave. MI 8-1236 Calif., San Francisco—Phillips & Edwards El. Corp., 285 Vermont St. HE 1-7400 Ore., Portland—Stubbs Electric Co., 33 N. W. Park Ave. Wash., Seattle—No. Coast Electric Co., 171 Jackson St. Wash., Seattle—E. H. Sosinc Co., 3618 39th Ave. AT 3-9017

**PANGBORN CORP.**, Pangborn Blvd., Hagerstown, Md.

Blast cleaning and dust control equipment, Abrasives (blast).

*Branch Office*

Calif., Pasadena—C. E. Pretzinger, 595 E. Colorado St. RY 1-6715

*Representatives*

Ore., Portland—Western Industrial Supply Co., 208 S. E. Hawthorne Blvd. BE 2-6640 Wash., Seattle—Western Foundry Sand Co., 1039 Elliott Ave. W. AT 3-0123

**PARKER BOILER MFG. CO., INC.**, 2035 E. 37th St., Los Angeles 58, Calif.

Hot water boilers, Steam boilers, Water softeners, Condensate return systems, Tanks.

*Representatives*

Ariz., Tempe—McCook & Son Boiler Co., 1201 Apache Blvd. Calif., Berkeley—Clyde Co., 920 Grayson St. TH 5-6130 Calif., Los Angeles—Parker Boiler Sales Corp., 2035 East 37th. AD 3-8263 Calif., Sacramento—Stocker's Boiler & Welding Works, 500 Broadway. GI 2-3062 Colo., Denver—E. P. Murr Co. 2542 West 28th Ave. GE 3-3334 Ore., Portland—Alvin R. Bravender Co., 125 N. W. Fifth Ave.

**PARKER FITTINGS AND HOSE DIV., PARKER-HANNIFIN CORP.**, 17325 Euclid Ave., Chicago 12, Ohio

Tube and hose fittings.

*Representatives*

Calif., Glendale—Haskel Eng. & Supply, 1236 So. Central Ave. Calif., Hayward—Robert B. Porter Co., Municipal Airport. Calif., Montebello—Metropolitan Supply Co., 1153 Greenwood Ave.

Calif., Oakland—General Mach. & Supply, 1680 14th St. Calif., San Francisco—Haskel Eng. & Supply, 225 11th St.

Colo., Denver—Metal Goods Corp., 4343 Holly St.

Colo., Englewood—Alta Eng. Co., 2950 S. Fox St.

N. Mex., Farmington—Snyder Co., 1903 E. Mojave St.

Ore., Portland—Jack Ogle & Co., 2505 S. E. 11th Ave.

Ore., Portland—Power Transmission Prod., 1107 N.W. 14th Ave.

Utah, Salt Lake City—Pace-Turpin & Co., 726 So. Third West

Wash., Seattle—Jack Ogle & Co., 105 Orcas St.

Wash., Seattle—Western Dynamics, Inc., 222 Westlake No.

**PARKER HYDRAULICS DIV., PARKER-HANNIFIN CORP.**, 17325 Euclid Ave., Cleveland 12, Ohio

Hydraulic accumulators, Check valves, Lever control valves.

*Representatives*

Calif., Glendale—Haskel Engineering & Supply, 1236 So. Central Ave.

Calif., Montebello—Metropolitan Supply, 1153 So. Greenwood.

Calif., San Francisco—Haskel Engineering & Supply, 225 11th St.

Ore., Portland—Jack Ogle & Co., 2505 S. E. 11th Ave.

Wash., Seattle—Jack Ogle & Co., 105 Orcas St.

Wash., Seattle—Western Dynamics, Inc., 220 Westlake No.

**PASS & SEYMOUR, INC.**, Syracuse 9, N. Y.

Electrical wiring devices (switches, outlets, connectors, lampholders, wall plates).

*Branch Office*

Calif., Arcadia—W. H. H. Reeder, 1444 Oaklawn Rd. EL 5-6513

*Representatives*

Calif., Los Altos—Keith Bering, 56 Los Altos Ave. WH 8-7041

Calif., Los Angeles—J. G. Pomeroy Co., 1004 E. Fourth St. MA 5-1105

Ore., Portland—Shaffer & Nelson, Inc., 139 S. E. Taylor St. BE 4-7437

Wash., Seattle—Shaffer & Nelson, Inc., 312 Occidental Ave. MU 0-1867

Wash., Spokane—Shaffer & Nelson, Inc., W. 1835 Broadway. FA 7-9528

**PEERLESS ELECTRIC CO., THE**, 1401 W. Market St., Warren, Ohio

Motors (electric DC, electric poly-phase and single phase AC).

*See advertisement on page 64*

*Representative*

Calif., Los Angeles—Hoyt & Sweet, 1132 E. 12th St.

**PESCO PRODUCTS DIV., BORG-WARNER CORP.**, 24700 No. Miles Rd., Bedford, Ohio

Hydraulic motors, Hydraulic pumps, Electric motors, Vacuum pumps, Fuel pumps, Fuel boosters, Axial flow fans, Cryogenic pumps, Servo valves, HEF pumps, Electronic cooling packages, Secondary power systems, Permanent magnet alternators, Inverters, Rotary and static frequency controls, Voltage controls.

*Branch Office*

Calif., Burbank—3310 Vanowen. TH 9-7411

*Representatives*

Calif., Burbank—Pacific Airmotive Corp., 2940 N. Hollywood Way.

Calif., Oakland—Pacific Airmotive Corp., Oakland International Airport.

Wash., Seattle—Pacific Airmotive Corp., Boeing Field.

**PHELPS DODGE COPPER PRODUCTS CORP.**, 300 Park Ave., New York, N. Y.

Copper and copper alloy pipe and tube, Condenser and heat exchanger tube, Power and communications cable, Building wire and cable, Magnet wire, Bare copper (wire, bus bars, extrusions, etc.).

*Branch Offices*

Calif., Los Angeles—6100 So. Garfield Ave. PA 1-1191

Calif., San Francisco—625 Market St. EX 2-7379

Colo., Denver—621 17th St. CH 4-9291

Ore., Portland—1436 N.W. 16th Ave. CA 6-6117

Wash., Seattle—505 Skinner Bldg. MA 3-0790

**PHILADELPHIA GEAR CORP.**, Erie Ave. and G Sts., Philadelphia 34, Pa.

Industrial gears, Speed reducers, Speed increasers, Gearmotors, Flexible couplings, automatic valve controls, Mixer drives.

*Branch Offices*

Calif., Gardena—507 E. Alondra St. JU 6-1860

Calif., San Francisco—1485 Bayshore Blvd. JU 4-7748

Colo., Denver—1700 15th St. MA 3-3221

Ore., Portland—103 S.W. Front Ave. CA 8-4311

Utah, Salt Lake City—375 S.W. Temple St. DA 2-4811

**PIC DESIGN CORP.**, 477 Atlantic Ave., East Rockaway, N. Y.

Precision gears, Shafts, Couplings, Speed reducers, Differentials, Bearings, Precision breadboard kits for research and development.

*Branch Office*

Calif., Van Nuys—7335 Van Nuys Blvd. ST 2-6702

**POLYMER CORP. OF PENNSYLVANIA**, 2140 Fairmont Ave., Reading, Pa.

Mill shapes of nylon, Teflon, and other industrial plastics; Nylon pressure tubing and braided hose.

*Branch Office*

Calif., Santa Ana—3028 So. Oak St. KI 5-1184

*Representatives*

Calif., Los Angeles—E. Jordan Brookes Co., 6601 Telegraph Rd. RA 3-9431

Calif., San Diego—E. Jordan Brookes Co., 3564 30th St. CY 5-2161

Calif., San Francisco—E. Jordan Brookes Co., 571 Howard St. YU 6-2974

Colo., Denver—Plasticrafts, Inc., 2800 No. Speer Blvd. GE 3-3368

Wash., Seattle—Allied Agencies, 4321 Linden Ave. No. ME 2-4814

**PORTER, H. K., CO., INC.**, see DELTA-STAR ELECTRIC DIV., W-S FITTINGS WORKS.

**H. K. PORTER CO., INC.**, see NATIONAL ELECTRIC DIV.

**PORTER, H. K., CO.**, see THERMOID DIV.

**POWER TRANSMISSION EQUIPMENT CO.**, 4501 Firestone Blvd., South Gate, Calif.

Bases (motor), Bearings (babbitt, ball, roller, sleeve), Drive belting (chain or link), Drive belt composition (composition, leather, rubber), Belts (timing), V Belts (composition, leather, rubber), Chains for drives (detachable link, roller, silent transmission), Clutches, Collars (shaft), Couplings (shaft), Gear.

*See advertisement on page 126*

motors, Gears (bevel, helical, spur), Gears (worm), Hangers (shaft), Hose (air, flexible metallic, hydraulic), Lacing (belt), Motors (electric poly-phase a-c, electric single-phase a-c, hydraulic, variable speed), Pillow blocks, Pulleys, Speed reducers (bevel gear, helical gear, planetary gear, shaft mounted, spur gear, worm gear), Sheaves, Sprockets, Variable speed transmission.

*Branch Office*

Calif., Bakersfield—109 23rd St. FA 5-8601

**POWERS REGULATOR CO.**, 3400 Oakton St., Skokie, Ill.

Thermostatic water mixing controls, Automatic temperature control systems.

*Branch Offices*

Calif., Los Angeles—3200 W. Temple St. DU 4-4187

Calif., San Francisco—161 Missouri St. UN 1-7471

Colo., Denver—240 Kalamath St. MA 3-3218

Ore., Portland—2809 N.E. 58th St. AT 8-5063

Utah, Salt Lake City—233 W. 13th So. HU 7-7765

Wash., Seattle—511 Second Ave. W. AT 4-8250

*Representatives*

Mont., Billings—C. L. Boyer & Co., 1002 Division St. Phone 2-3941

N. Mex., Albuquerque—Control & Equipment Co., 5106 Grand Ave., N. E. AL 5-1631

## PUNCH-LOK—ROOTS-CONNERSVILLE

**PUNCH-LOK CO.,** 321 No. Justine St., Chicago 7, Ill.

Hose clamps, Tools and fittings.

Representatives

Calif., Los Angeles—Continental Rubber Works, 3121 E. 12th St. AN 1-0168  
Calif., San Francisco—Continental Rubber Works, 1325 Egbert St. VA 6-4777  
Utah, Salt Lake City—Mountain States Rubber Co., Inc., 121 Social Hall Ave. Phone 3-6727  
Also B. F. Goodrich in all principal cities in the West

**QUINCY COMPRESSOR CO.,** 217 Maine St., Quincy, Ill.

Air compressors, Vacuum pumps

Representatives

Ariz., Phoenix—Western Machinery Co., 320 No. 17th St. AL 3-4101  
Calif., Los Angeles—Eissick Manufacturing Co., 1950 Santa Fe Ave. MA 9-3341  
Calif., Los Angeles—Sharpes Manufacturing Co., 1224 Wall St. RI 9-4368  
Calif., San Francisco—Quincy Compressor West Coast Distributors, 16th and Bryant Sts. UN 1-3030  
N. Mex., Albuquerque—Kohlihaas Tank & Equipment Co., 2212 First St. N.W. CH 3-3766  
Ore., Portland—Rogers Machinery Co., 5035 S.E. 17th Ave. BE 6-6478  
Wash., Seattle—Rothweiler Co., 5109 Ballard Ave. SU 4-5300

**RANDALL GRAPHITE BEARINGS, INC.**, Greenlawn & Lake Sts., Lima, Ohio

Bearings (sleeve), Collars (shaft), Pillow blocks.

Representatives

Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa. RI 7-5611  
Calif., San Francisco—Allan P. James Co., 430 Ninth. MA 1-5934

**RAYBESTOS-MANHATTAN, INC.,** 61 Willet St., Passaic, N. J.

Belting, drive (composition, rubber), Belts, V (composition, rubber), Hose (air, flexible metallic, hydraulic)

Branch Offices

Calif., Los Angeles—4651 Pacific Blvd. LU 8-4254  
Calif., So. San Francisco—168 Beacon St. PL 6-6981  
Colo., Denver—4500 York St. AC 2-8264  
Ore., Portland—1220 S.W. Stark St. CA 7-2261  
Wash., Seattle—2450 Sixth Ave. So. EL 6725

**REEVES PULLEY CO. DIV., RELIANCE ELECTRIC & ENGINEERING CO.,** 1225 Seventh St., Columbus, Ind.

Bases (motor, adjustable), Vari-speed Moto drives, Vari-speed motor pulleys, Variable speed transmissions, Flexi-speed drives, Vari-spin drives.

Branch Offices

Calif., Burlingame—1525 Adrian Rd. OX 7-5341  
Calif., Los Angeles—2557 Yates Ave. RA 3-8454  
Calif., Sacramento—2123 J St. GL 8-1682  
Representatives

Colo., Denver—Hamilton Associates, 1236 Elati St. CH 4-1305  
Ore., Portland—Shafer & Nelson, Inc., 139 S.E. Taylor St. BE 4-7437  
Utah, Salt Lake City—C. W. Silver Co., 550 W. Seventh St. EL 5-5378  
Wash., Seattle—Shafer & Nelson, 312 Occidental Ave. MU 2-0186

**RELIANCE ELECTRIC & ENGINEERING CO.,** 24701 Euclid Ave., Cleveland 17, Ohio

Controls (electric motor), Gearmotors, Duty Master motors, (AC), Super-T motors (DC), Motor generator sets, Adjustable-speed motors, Brake-motors, Variable-speed drives, Variable-speed transmissions.

Branch Offices

Ariz., Phoenix—Hennessey Equip. Sales Co., 4908 N. Seventh Ave. CR 7-7268  
Calif., Los Angeles—2557 Yates Ave. RA 3-8454  
Calif., Burlingame—1525 Adrian Road. OX 7-5341  
Calif., Sacramento—2123 J St. GI 8-1682  
Colo., Denver—Peterson Co., 4949 Colorado Blvd. DE 3-5434  
Ida., Boise—C. W. Silver Co., 1118 No. 20th St. Phone 2-6947  
N. Mex., Albuquerque—Boyd Industrial Engineering, Inc., 112 W. Granite St. Phone 3-2247  
Ore., Portland—Shafer & Nelson, 189 S.E. Taylor St. BE 4-7437

Utah, Salt Lake City—Clarence W. Silver Co., 550 W. 7th South St. EL 5-5378  
Wash., Seattle—Shafer & Nelson, 312 Occidental Ave. MU 2-0186  
Wash., Spokane—Shafer & Nelson, P. O. Box 198. FA 7-9528

**REMCO MFG. CO., a div. of FIRCO, INC.**, 934 So. Main St., Willits, Calif. GL 9-2109

Cylinders (heavy duty, special, air, hydraulic, telescopic, hydraulic hoists), Packing (metallic type rod and piston), Sprockets.

**REPUBLIC ELECTRIC & DEVELOPMENT CO.,** 2627 Western Ave., Seattle 1, Wash. MA 4-4515

Electric controls, Variable speed drives.

Representatives

Calif., Arata—Industrial Electric Service, Samoa Rd. VA 2-2908  
Ore., Portland—Geo. W. Osgood Co., P. O. Box 361. CA 2-1953

**REPUBLIC STEEL CORP., STEEL & TUBES DIV.,** 224 E. 131st St., Cleveland 8, Ohio

Tubing, pressure (including boiler tubing, heat exchanger and condenser tubing), Tubing (electrical metalic), Conduit (rigid threaded).

Branch Offices

Calif., Los Angeles—2900 E. 44th St. LU 2-6976

Calif., San Francisco—Rialto Bldg. GA 1-8728

Colo., Denver—Denver Club Bldg. MA 3-5289

Wash., Seattle—White-Henry-Stewart Bldg. MA 8883

Representatives

Colo., Denver—C. D. Bell & Co., 2149 S. Clermont. SK 6-9421 (for electrical products)

Wash., Seattle—Shaffer & Nelson Co., 312 Occidental Ave. MU 2-0186 (for electrical products)

**RESISTOFLEX CORP.**, Roseland, N.J.

Fluoroflex-T flexible hose assemblies, Fluoroflex-T Teflon rod, sheet and tube, Fluoroflex-T Teflon lined pipe, bellows, etc.

Branch Offices

Calif., Anaheim—301 No. Crescent Way. PR 2-4700

Calif., Berkeley—1605 Solano Ave. LA 4-0262

Calif., San Diego—2547 Fourth Ave. BE 3-3522

Representatives

Calif., Berkeley—Stiehl & Co., 605 Addison St. TH 3-6826

Calif., Montebello—Metropolitan Supply Co., 1153 So. Greenwood Ave. RA 3-9321

Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

**RHOADS, J. E., & SONS,** 2100 W. Eleventh St., Wilmington 99, Del.

Drive belting (leather, plastic), mechanical leather packings.

Representatives

Calif., Los Angeles—Kenneth B. Komp Sales Co., 1515 E. Olympic Blvd.

Calif., San Diego—Victor Equipment Co., 2711 Kettner Blvd. CY 6-6372

Calif., Torrance—Western Air Compressor Co., 2001 W. Artesia Blvd. DA 9-7521

Ore., Portland—General Rubber & Supply Co., 2258 N. W. Raleigh St.

**RILEY STOKER CORP.,** 9 Neponset St., Worcester 6, Mass.

Boilers, Fuel burning equipment, Complete steam generating units.

Representatives

Calif., Los Angeles—R. G. Meyler Corp., 510 W. Sixth St. MA 7-1831

Calif., San Francisco—Bumstead-Woolford Co., 55 New Montgomery St. SU 1-6444

Utah, Salt Lake City—Pace Turpin & Co., 726 So. Third W. DA 2-5595

Wash., Seattle—Bumstead-Woolford Co., 1411 Fourth Ave. MA 3-4915

**RIVETT LATHE & GRINDER, INC.,** 18 Riverview Rd., Brighton 35, (Boston) Mass.

Cylinders, Air control valves, Hyd control valves, Hyd pumping units. Valves include 3-way, 4-way, flow control, relief, sequence, unloading, reducing, check and counterbalance.

Representatives

Calif., Bell Gardens—Paul Munroe Co., 6430 E. Gage Ave. LU 7-5226

Calif., Oakland—Ditzen Eng'r. & Sales, 1411 Fourth Ave. MA 3-4915

6002 Telegraph Ave. OL 3-8262  
Colo., Denver—Hydraulic Service & Supply Co., 5975 Colorado Blvd. AT 8-3273  
Ore., Portland—Ray Bobbs Air-Draulics, Inc., 218 S.E. 12th Ave. BE 2-6133

**ROBBINS AVIATION, INC.,** 2350 E. 38th St., Los Angeles 58, Calif. LU 9-5221

Dehydration equipment, Valves, Special aircraft equipment.

Representatives

Calif., Burbank—General Air Equipment, 824 Hollywood Way. TH 2-9689

Calif., San Diego—Victor Equipment Co., 2711 Kettner Blvd. CY 6-6372

Calif., Torrance—Western Air Compressor Co., 2001 W. Artesia Blvd. DA 9-7521

Wash., Seattle—A. F. Woolsey, 64 Madison St. MA 3-7061

**ROBBINS & MYERS, INC., MOTOR DIV.,** 1345 Lagonda Ave., Springfield, Ohio

Electric motors (fractional, integral hp.).

Representatives

Ariz., Phoenix—Toncray Equip. Co., 213 N. First Ave. AL 4-1383

Calif., Los Angeles—R. Meussdorffer, 3487 Cahuenga Blvd. HO 2-6039

Calif., San Francisco—C. W. Boswell, 1139 Mission St. HE 1-3435

Colo., Denver—Howard Toncray, 1732 Blake St. CH 4-1102

Utah, Salt Lake City—Toncray Equip. Co., 1347 So. 17th E. IN 6-9186

Wash., Seattle—N. R. Schultz Co., Second and Cherry Bldg. SE 6396

**ROBERTSHAW-FULTON CONTROLS CO.,** see ACRO DIV.

**ROBERTSHAW-FULTON CONTROLS CO.,** see FULTON SYLPHON DIV.

**ROCKBESTOS PRODUCTS CORP.,** Nicoll and Canner Sts., New Haven, Conn.

Wires and cables, aircraft, hookup, coaxial (high temperature) for aircraft and missile applications (asbestos, varnished-cambric, silicone rubber and thermoplastic insulated); Power, control and lighting wires for industrial, commercial and original equipment applications.

Branch Offices

Calif., Burlingame—6 Guittard Rd. OX 7-1060

Calif., Los Angeles—4020 W. Third. DU 7-7378

Wash., Seattle—4015 Aurora Ave. ME 3-4344

**ROCKFORD CHAIN CO., INC.,** 11645 Klinger, Detroit 12, Mich.

Engineering, Conveyor, Power Transmission chains.

Representative

Tex., Dallas (serves New Mexico)—J. T. Chapman Co., 1103 Levee St.

**ROCKWELL MFG. CO.,** 400 No. Lexington Ave., Pittsburgh 8, Pa.

Hydraulic drives (motors and pumps), Regulators (gas pressure).

Branch Offices

Calif., Los Angeles—3136 E. 11th. AN 1-6107

Calif., San Francisco—525 Market St. GA 1-0071

Colo., Denver—208 Mile High Center Bldg. MA 3-0278, -79, -70.

Wash., Seattle—119 W. Denny Way. AT 4-8320

**ROME CABLE CORP.,** 421 Ridge St., Rome, N. Y.

Conduits and fittings (electric), Wire and cable (electric).

Branch Offices

Calif., Los Angeles—2510 So. Malt Ave. RA 3-3631

Calif., San Francisco—1100 Selby St. VA 6-3580

Utah, Salt Lake City—230 So. Fourth W. EL 9-8811

Wash., Seattle—3430 Fourth Ave. So. MA 4-3017

**ROOTS - CONNERSVILLE BLOWER DIV., DRESSER INDUSTRIES,** 900 W. Mount St., Connersville, Ind.

Blowers, Gas pumps (rotary, centrifugal), Vacuum pumps, Gas meters (industrial), Spiraxial compressors.

## ROPER—SHAFER BEARING

**Branch Offices**  
Calif., Los Angeles—5120 Pacific Blvd.  
LU 3-1361, -4207  
Calif., San Francisco—593 Market St. EX  
2-0232

**Representatives**

Ariz., Phoenix—Ken Smith Co., P.O. Box  
6104, AL 8-0901  
Colo., Denver—G. M. Wallace & Co., Den-  
ham Bldg. AM 6-0386  
Mont., Butte—G. M. Wallace & Co., P.O.  
Box 208, Phone 2-8391  
Ore., Portland—C. L. Koerner, 12200 S.E.  
Oakfield Rd. OL 4-8773  
Utah, Salt Lake City—G. M. Wallace &  
Co., Continental Bank Bldg. EM 4-5611

**ROPER HYDRAULICS, INC.**, 340  
Blackhawk Park Ave., Rockford,  
III.

Rotary gear, positive displacement pumps.

**Representatives**

Calif., Los Angeles—M. C. Wemple, 2011  
Santa Fe Ave. MA 7-5662  
Calif., San Francisco—Woodin & Little,  
80 Elmira St. JU 6-6500  
Ore., Portland—Pacific Pumping Co., 526  
N.W. Broadway. CA 8-2121  
Utah, Salt Lake City—Robert Taylor &  
Sons, 1077 So. Main St. DA 2-5525

**ROSS, J. O. ENGINEERING**, a div. of  
**MIDLAND-ROSS CORP.**, 730 Third  
Ave., New York 17, N.Y.

Dryers, industrial air systems, ovens.

**Branch Offices**

Calif., Los Angeles—6417 Bandini Blvd.  
Wash., Seattle—823 Skinner Bldg. MA 4-  
7165

**ROYLYN, INC.**, 620 Paula Ave.,  
Glendale 1, Calif. CH 5-8521, Cl  
6-1761

Fueling nozzles, Open and self-sealing couplings,  
Caps, Nipples, Chain assemblies.

**RUCKER CO., THE**, 4700 San Pablo  
Ave., Oakland 8, Calif. OL 3-5221

Test benches, Power units, Centrifuges, Drum filters,  
Control centers, Controls (compressed air,  
hydraulic), Cylinders (air, hydraulic), Testing instru-  
ments, Hydraulic power pumps, Valves (air power  
line, hydraulic power line).

**Branch Offices**

Calif., South Gate—4956 Firestone Blvd.  
LO 4-2521  
Ore., Portland—1633 N. W. 21st Ave. CA  
3-0205  
Wash., Seattle—1000 Fourth Ave. So. MA  
2-2783

**RUNDL ELECTRIC CO.**, 230 Adrian  
Rd., Millbrae, Calif.

Control and instrumentation system, engineering;  
Electric instrumentation panels; Special industrial  
control equipment; Automatic warehouse control  
equipment.

**Representative**

Calif., Van Nuys—Thomas Saunders, P. O.  
Box 2174, South Annex. TR 3-3370, DI  
2-5413

**RUSSELL MFG. CO.**, E. Main St.,  
Middletown, Conn.

Belts and belting.

**Branch Office**

Calif., Oakland—555 Fifth Ave. GL 2-2442  
**Representatives**

Ariz., Phoenix—E. L. Michael, Sr., 3746 E.  
Coolidge. CR 9-2612  
Calif., Los Angeles—C. R. Davis, 422 E.  
Third St. MU 8-3144  
Calif., Los Altos—T. J. Termino, 1939 New-  
Castle Dr. YO 7-4378

**S&C ELECTRIC CO.**, 4435 Ravens-  
wood Ave., Chicago 40, Ill.

Power fuses, Distribution cutouts, Disconnects,  
Load interrupters, Metal-clad switchgear.

**Branch Office**

Calif., Burlingame—1640 Rollins Rd. OX 7-  
1130  
**Representatives**

Ariz., Phoenix—Randolph Engineering  
Corp., 1029 N. First St. AL 8-5281  
Calif., El Monte—Randolph Engineering  
Corp., 12202 E. Garvey Blvd. CU 3-4183  
Colo., Denver—Peterson Co., 4949 Colorado  
Blvd. DE 3-5434

Ore., Portland—Andrew L. Polich, Inc., 734  
N. W. Gilsan St. CA 3-6241  
Utah, Salt Lake City—Riter Engineering  
Co., 1368 Major St. IN 7-9449

Wash., Seattle—Muth-Richards Co., 1804  
Bush Pl. EA 3-2128

**S K F INDUSTRIES, INC.**, Front St.  
& Erie Ave., Philadelphia 32, Pa.  
Bearings (ball, roller), Pillow blocks, Tyson tapered  
roller bearings.

**Branch Offices**

Calif., Los Angeles—3131 S. Hill St. RI 9-  
3168

Calif., San Francisco—790 Tennessee St.  
MI 8-4625

Colo., Denver—1420 - 18th St. MA 3-3924  
Ore., Portland—1625 N. W. Hoyt St. CA 8-  
4309

Wash., Seattle—170 Denny Way. MA 4-4454

**S-P MFG. CORP.**, 30201 Aurora Rd.,  
Solon, Ohio

Power chucks, Air and hydraulic cylinders, Valves  
and accessories.

**Representatives**

Calif., Los Angeles—Virgil P. Poleos, Box  
8537, Crenshaw Sta. AX 3-4571

Utah, Salt Lake City—Sales Engineering  
Co., Inc., 203 W. Grass Ave. HU 5-3721  
Wash., Seattle—Langlois Air & Hyd. Co.,  
1443 Northlake Way. ME 3-3747

**SALSBURY CORP.**, 1161 E. Florence  
Ave., Los Angeles 1, Calif.

Clutches, Variable speed transmissions.

**Representatives**

Calif., Alhambra—J. R. Engine & Supply,  
1819 W. Valley Blvd. CU 3-1591

Calif., Long Beach—Larry McDowell, 3001  
Cherry Ave. GA 7-9872

Calif., San Francisco—H. G. Makelim Co.,  
655 Bryant St. YU 6-5682

**SARCO CO., INC.**, Empire State  
Bldg., New York 1, N.Y.

Controls (compressed air, automatic temperature),  
Regulators (pressure), Traps (self-powered type and  
electric indicating type, steam), Strainers (pipe  
lines).

See advertisement on page 99

**Branch Office**

Calif., San Francisco—1485 Bayshore Blvd.  
JU 6-1917

**Representatives**

Ariz., Scottsdale—A. C. Baechlin, 1237 No.  
Sunset Trail. WH 5-0903

Calif., Los Angeles—T. H. Crears Corp.,  
5706 Airdrome St. WE 6-1141

Colo., Denver—Equipment Specialties Co.,  
171 Vallejo St. SH 4-2737

Ida., Boise—Mechanical Equipment &  
Engineering, Inc., 919 N. Orchard St. Phone  
2-4393

Mont., Billings—Lefler Engineering Sales,  
108 No. 23rd St. P.O. Box 1142. Phone  
2-2105

N. Mex., Albuquerque—Technical Service  
Co., 730 Haines Ave., N.W., P.O. Box 131.  
Phone 7-1508

Ore., Portland—R. H. Brown & Co., 5825  
N. W. Front Ave. CA 7-1155

Utah, Salt Lake City—Gritton & Wilde, 204  
Dooly Blvd. DA 2-1654

Wash., Seattle—E. H. Norton, 909 Lloyd  
Bldg. MU 2-0483

Wash., Spokane—John L. Harvey Co., So.  
121 Monroe St. MA 4-3002

**A. SCHRADER'S SON, DIV. OF SCO-  
VILL MFG. CO., INC.**, 470 Vanderbilt  
Ave., Brooklyn 38, N.Y.

Controls (compressed air), Cylinders (air, hose  
(air), Regulators (pressure), Valves (air power  
line)).

**Branch Office**

Calif., Los Angeles—6464 E. Flotilla St. OV  
5-7305

**SCHRAMM, INC.**, West Chester, Pa.  
Air compressors (portable, stationary).

**Branch Offices**

Calif., Los Angeles—946 E. 6th St. MA 3-  
4177

Calif., Oakland—16th and Jefferson Sts.  
HI 4-3982

**Representatives**

Calif., El Cajon—Kroeger Equipment Co.,  
1655 N. Magnolia Ave. HI 2-4455

Calif., Huntington Park—P & B Equipment  
Co., 1960 E. Slauson Ave. LU 2-8433

Calif., Los Angeles—Martin Supply Co.,  
2100 S. San Pedro St. RI 7-1132

Calif., Los Angeles—Morrissey Equipment  
Co., 1514 S. Gerhart. RA 3-9311

Calif., Los Angeles—Richter Engineering  
Co., 2311 E. Eighth St. MA 7-3469

Calif., Oakland—Blakemoor Equipment  
Co., 9025 G St. LO 2-3582

Calif., Salinas—Farmers Mercantile Co.,  
721 Abbott St. HA 4-7383

Calif., San Francisco—Kean Co., 55 Brady  
St. MA 1-6477

Calif., Santa Barbara—Milpas Rental Ser-  
vice, 6 N. Milpas St. WO 2-1086

Calif., Stratford—Orton's Equipment Co.,  
Inc., 20280 Main St. WI 7-3301

Colo., Denver—Industrial Supply Co., 1745-  
47 Blake St. TA 5-3667

Mont., Helena—Montana Powder & Equip-  
ment Co., 12 E. Lawrence. HI 2-2990

Nev., Reno—Roeder Equipment Co., 288  
Gould St. FA 2-1852

Ore., Portland—Hamilton Engine Sales,  
Inc., 2580 N.W. Upshur St. CA 3-3165

Utah, Midvale—Utah Bit & Steel, Inc.,  
7580 So. State. AM 5-3544

Wash., Seattle—Tool Crib Sales, Inc., 4797

First Ave. So. PA 5-4595

Wash., Spokane—General Machinery Co.,  
P. O. Box 4227, Stn. B. KE 4-1535

**SCHROEDER BROTHERS CORP.**, Box  
72, Nichol Ave., McKees Rocks, Pa.  
Instruments (measuring and testing).

**Representatives**

Colo., Denver—King & East, 2050 Bryant  
St. GE 3-6413

Colo., Denver—Ralph B. Moore, Inc., 1821  
Blake St. CH 4-2969

N. Mex., Carlsbad—Bit Grinding Service,  
P. O. Box 803. TU 5-6133

**SCOVILL MFG. CO.**, see **A. SCHRA-  
DER'S SON**, a div.

**SERVEL, INC.**, see **BURGESS BAT-  
TERY CO.**, a div.

**SEWALL, E. B., MFG. CO.**, 705 Ray-  
mond Ave., St. Paul 14, Minn.

Gears, Sprockets, Gear Rack, Special gear boxes.

**Representatives**

Calif., Maywood—R & J Dick Co., 5276

**Atlantic**

Blvd. LO 8-4014

Calif., San Francisco—R & J Dick Co.,  
510 Bryant St. SU 1-1341

Wash., Seattle—R & J Dick Co., 307 Mari-  
time Bldg. MU 2-1922

**SHAFER BEARING DIV., CHAIN BELT  
CO.**, Downers Grove, Ill.

Self aligning roller bearing pillow blocks and cart-  
ridge, duplex, flange and take-up units.

**Branch Offices**

Calif., Berkeley—2940 Seventh St. TH 3-  
6801

Calif., Los Angeles—7601 Telegraph Rd. RA  
3-4751

Colo., Denver—110 16th St. CH 4-7467

Ore., Portland—2310 N.W. 24th Ave. CA 3-  
6121

Utah, Salt Lake City—10 Exchange Pl. EL  
9-6679

Wash., Seattle—2425 Airport Way. MA 7051

**Distributors**

Ariz., Phoenix—Garret Supply Co., 2950 W.  
Thomas Rd.

Ariz., Tucson—Tucson Bearing Co., 1100 S.  
Park Ave.

Calif., Bakersfield—Hopper Machine  
Works, 301 26th St.

Calif., Bakersfield—All Bearing Service,  
Inc., 2728 Chester Ave.

Calif., Burbank—Valley Equip. & Supply  
Co., 439½ S. Victory Blvd.

Calif., El Centro—All Bearing Service, Inc.

Calif., El Centro—Winn Supply Co., 354  
E. Main St.

Calif., Eureka—Bearings & Transmission  
Products, 2930 Broadway.

Calif., Eureka—Eureka Boiler Works &  
Acme Foundry Co., Foot of S St.

Calif., Fresno—Valley Foundry & Machine  
Co., 2510 So. East Ave.

Calif., Hayward—All Bearing Service, 1330  
Castro St.

Calif., Long Beach—Bay City Bearing Co.,  
709 W. 16th St.

Calif., Los Angeles—All Bearing Service,  
Inc., 325 W. 17th St.

Calif., Los Angeles—Bearing Sales Co.,  
1950 So. Olive St.

Calif., Los Angeles—Garrett Supply Co.,  
3844 So. Santa Fe Ave.

Calif., Maywood—Bay City Bearing Co.,  
Inc., 5275 Atlantic

Calif., Oakland—Bay City Iron Works,  
Fourth and Washington

Calif., Oakland—Bearing Engineering Co.,  
1019 Harrison St.

Calif., Oxnard—Ventura County Bearing  
House, 134 Palm Dr.

Calif., Pomona—Reliable Bearing & Sup-  
ply Co., 777 E. Second St.

Calif., Riverside—Reliable Bearing & Sup-  
ply Co., 3545 Main St.

Calif., San Bernardino—Reliable Bearing  
& Supply Co., 263 So. E St.

Calif., San Diego—All Bearing Service,  
Inc., 256 Seventh Ave.

# SHINGLE—STEPHENS ADAMSON

Calif., San Diego—Winn Supply Co., 256 Seventh Ave.  
 Calif., San Francisco—All Bearing Service, Inc., 456 Brannan St.  
 Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.  
 Calif., San Francisco—Chas. A. Fowler Co., 979 Bryant St.  
 Calif., San Jose—Bearing & Equipment Co., 60 So. San Pedro St.  
 Calif., Santa Maria—The Bearing House, P.O. Box 932, Pescadero Rd.  
 Calif., Stockton—The Bearing Supply Co., 300 N. Wilson Way  
 Calif., Stockton—Guntert & Zimmerman Sales Div., Inc., P.O. Box 1688  
 Calif., Taft—Hopper Machine Works  
 Calif., Ukiah—Klamath Machinery & Locomotive Works, Inc., 720 No. State St.  
 Calif., Ventura—Ventura County Bearing House, 1252 N. Ventura Ave.  
 Colo., Cripple Creek—Union Supply Co.  
 Colo., Denver—Bearing Service & Supply Co., 1850 Market St.  
 Colo., Denver—Colorado Bearing Co., 1601-11 Wazee St.  
 Colo., Denver—Union Bearing & Transmission Co., 1622 Wazee St.  
 Colo., Denver—Union Supply Co., 5460 Colorado Blvd.  
 Ida., Boise—Western Bearings, Inc., 520 Front St.  
 Ida., Idaho Falls—Bearing Service & Supply Co., Air-Port Rd.  
 Ida., Lewiston—Jameson Machine & Supply Co., 855 D St.  
 Mont., Billings—Bearings Supply Co., 13 No. 31st St., P.O. Box 1391  
 Nev., Las Vegas—Reliable Bearing & Supply Co., 2700 S. Highland Dr.  
 Nev., Reno—Pioneer Equip. Co. of Nevada, 525 Kietzke Lane  
 N. Mex., Albuquerque—Gorman Engr. Co. of N. Mex., 1330 N. 12th Ave.  
 N. Mex., Albuquerque—R. L. Harrison Co., Inc., 1801 4th St. N.W., P.O. Box 1320  
 N. Mex., Carlsbad—Carlsbad Supply Co., P.O. Box 1042  
 N. Mex., Farmington—C & K Industrial Supply, 635 E. Main St.  
 N. Mex., Roswell—Clowe & Cowan Ore., Albany—Bearing Specialty Co., 426 E. Second Ave.  
 Ore., Coos Bay—A. B. Daly Co., 824 No. Front St.  
 Ore., Eugene—Bearing Sales & Service, 225 Seventh Ave. W.  
 Ore., Eugene—Harmer Co., 208 Polk St.  
 Ore., Eugene—Oregon Supply Co., 250 W. Fourth St.  
 Ore., Klamath Falls—Klamath Machy. Co., 445 Spring St.  
 Ore., North Bend—Oregon Pacific Co., No. Bend City Dock, P.O. Box G  
 Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St.  
 Ore., Portland—General Tool Co., 325 N.W. 15th Ave.  
 Ore., Portland—Harshberger Equipment Co., 425 S.E. Ninth Ave.  
 Ore., Portland—H. W. Sharp Co., 71 S. W. Oak St.  
 Ore., Prineville—Prineville Mach. & Supply Co., P.O. Box 85  
 Ore., Roseburg—Bearing Sales & Service, 117 So. Stephens St.  
 Ore., Roseburg—Industrial Supply Co., 132 So. Stephens St.  
 Ore., Salem—Bearing Specialty Co., 299 Commercial  
 Ore., Salem—Salem Steel & Supply Co., 180 Court St.  
 Utah, Helper—Carbon Transfer & Supply Co., P.O. Box 180  
 Utah, Salt Lake City—Bearings Engineering & Sales Co., 756 So. Second St. W.  
 Wash., Aberdeen—Bearing Sales & Service 317 E. Market St.  
 Wash., Aberdeen—Whitcher Machinery Co., 411 E. State St.  
 Wash., Everett—Bearing Sales & Service, Inc., 2803 Grand Ave.  
 Wash., Everett—Everett Hardware Co., 2718 Broadway.  
 Wash., Longview—Bearing Sales & Service Wash., Longview—Longview Equipment Co.  
 Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St.  
 Wash., Port Angeles—Bearing Sales & Service, Inc.  
 Wash., Seattle—All Bearing Service, Inc., 2741 Fourth Ave. So.  
 Wash., Seattle—Bearing Sales & Service, Inc., 2906 Sixth Ave. So.  
 Wash., Seattle—C. M. Lovsted & Co., Inc., 4000 W. Marginal Way  
 Wash., Seattle—Washington Machinery Co., 7329 E. Marginal Way  
 Wash., Spokane—Bitco, Inc., E., 2928 Trent Ave.  
 Wash., Spokane—Empire Bearing Co., E. 3107 Trent Ave.  
 Wash., Spokane—General Machinery Co., E. 3500 Block, Riverside Ave.  
 Wash., Tacoma—All Bearing Service Co., 2324 E. 11th St.

Wash., Tacoma—Bearing Sales & Service, Inc., 1718 Pacific Ave.  
 Wash., Tacoma—W. S. Walter Co., 1722 Pacific Ave.  
 Wash., Walla Walla—Morrison Supply Co., 217 E. Alder St.  
 Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

## SHINGLE, L. H., see GRATON & KNIGHT CO., a div.

## SKINNER ELECTRIC VALVE DIV., 95

Edgewood Ave., New Britain, Conn.  
 Stainless steel solenoid valves (for air, water, oil, steam, vacuum and many other media).

### Representatives

Calif., San Francisco—Western Control Equipment Co., 3573 Pierce St., WE 1-2155  
 Calif., Van Nuys—Western Control Equipment Co., 14615 Ventura Blvd. ST 3-3040  
 Colo., Denver—Automatic Control & Equipment Co., 5750 Pecos St. GE 3-6436  
 Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier, CA 2-3295  
 Wash., Seattle—Hydraulic & Air Equipment Co., 2450 Sixth Ave. So. MU 1681

### Distributors

Ariz., Phoenix—Air-Draulics Co., 3155 N. 29th Ave. AL 8-6441  
 Calif., Glendale—Haskel Engineering & Supply, 1236 So. Central, CH 5-6811  
 Calif., Montebello—Metropolitan Supply Co., 1152 So. Greenwood Ave. RA 3-9321, PA 8-0137  
 Calif., Oakland—Rucker Co., 4700 San Pablo, OL 3-5221  
 Calif., San Francisco—California Instrument Co., 351 10th Ave. UN 3-0350  
 Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271

**SMITH, A. O., CORP.**, 531 No. Fourth St., Tipp City, Ohio  
**Gearmotors**, Motors (electric, poly-phase and single-phase AC).

### Branch Offices

Calif., Los Angeles—5715 Smithway St. RA 3-3361  
 Calif., Oakland—505 66th Ave. LO 9-8994  

### Representatives

Ariz., Phoenix—Howard Jordan Co., 1007 Grand Ave. AL 2-5183  
 Calif., San Diego—James A. Setchell, 301 W. G St. BE 3-3981  
 Colo., Denver—Bacon Electric Co., 1240 So. Elizabeth St. PE 3-5547  
 N. Mex., Albuquerque—A & A Supply Co., 114 Morningside N.E. AL 6-0307  
 Ore., Grants Pass—R. V. Jones, 1725 Williams Secondary, GR 6-6148  
 Ore., Portland—A. L. Polich, Inc., 734 N.W. Gilman St. CA 8-2671  
 Utah, Salt Lake City—Gates Co., 200 So. Main St. EL 9-1101  
 Wash., Seattle—H. M. Denny Co., 111 W. Harrison AT 4-0530

**SMITH, GROVER MANUFACTURING CORP.**, 850 E. Valley Blvd., San Gabriel, Calif.

Air powered industrial pumps, automotive service equipment and related items.

### Representatives

Ariz., Phoenix—Natty's Service Station Equipment Co., Box 992.  
 Calif., Palo Alto—Wilson Sales Co., 475 California Ave.  
 Calif., Sacramento—Central Equipment, Blumenfeld Ave. & Arden Way.  
 Calif., San Francisco—RIX Co., 582 Sixth St.  
 Calif., San Gabriel—Gresco, Inc., 848 E. Valley Blvd. AT 9-5284  
 Colo., Denver—Cawood Service System, 3725 Morrison Rd.  
 Colo., Denver—Western Machinery, 2400 W. Seventh Ave.  
 Colo., Grand Junction—R. Houdashelt Co., 1225 So. Seventh St.  
 Colo., Pueblo—Pueblo Motive Service, 1028 No. Santa Fe.  
 Mont., Billings—Automotive & Industrial Dist., 3517 First Ave. So.  
 Mont., Great Falls—Carl Weisman & Sons, 300 Third St.  
 Nev., Las Vegas—Blystone Equipment, 2840 Fremont.

Nev., Las Vegas—Nevada Service Station Equipment Co., 106½ Wyoming.

N. Mex., Albuquerque—Pound Bros., 412 W. Marble.  
 Ore., Portland—Henry Kalz, 4023 No. Interstate AT 7-9700  
 Ore., Portland—Rogers Machinery, 5035 S. E. McLoughlin Blvd.  
 Utah, Salt Lake City—Flinco, Inc., 276 W. First St.  
 Utah, Salt Lake City—Western Machinery, 2300 So. Main St.  
 Wash., Seattle—Andrews Machinery, 3653 E. Marginal Way

Wash., Seattle—Ditto Equipment Co., 6747 Empire Way, MO 9850  
 Wash., Spokane—Headlight Oil Co., 4512 No. Market St.  
 Wash., Spokane—Western Machinery, 808 No. Division St.  
 Wyo., Casper—Wyoming Automotive, 415 W. 16th St.  
 Wyo., Cheyenne—W. A. Corson Co., 1620 Thomas Ave.

**SPERRY PRODUCTS, INC.**, Shelter Rock Rd., Danbury, Conn.  
 Instruments (measuring and testing), Controls (hydraulic).

### Branch Office

Calif., Los Angeles—5258 E. Washington Blvd. AN 3-7722

**SPLIT BALLBEARING CORP.**, a div. of **MPB, INC.**, Mechanic St., Lebanon, N.H.  
**Bearings** (ball).

### Branch Office

Calif., Los Angeles—6214 W. Manchester, SP 6-0733

### Representatives

Calif., San Francisco—Geo. M. Philpott Co., 1060 Bryant St. HE 1-5475  
 Colo., Denver—Bearings Service & Supply Co., 4433 Claude Ct. AC 2-5991  
 Ore., Portland—Bearing Sales & Service, Inc., 1645 N. W. Hoyt St. CA 3-6301  
 Utah, Salt Lake City—Bearings Service & Supply Co., 1207 S. Main, IN 6-8776  
 Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331

**SQUARE D CO.**, 4335 Valley Blvd., Los Angeles 32, Calif.

Circuit breakers, control centers, ducts, load centers, panelboards, regulators, substations, switches, switchgear equipment.

### Branch Offices

Calif., Menlo Park—20 Sharon Ct. DA 4-3871  
 Calif., Riverside—2706 N. Main St. OV 4-9291  
 Calif., Sacramento—1331 "T" St. GI 2-8332  
 Calif., San Diego—Rm. 604, Calif. Theatre, BE 3-7621  
 Calif., San Francisco—211 Industrial St. JU 7-4590  
 Colo., Denver—677 Alcott St. KE 4-6234  
 Ore., Portland—711 S.E. Ankeny, BE 4-8488  
 Utah, Salt Lake City—455 E. 4th S. DA 2-5859  
 Wash., Seattle—830 Corwin Pl. EA 3-1474  
 Wash., Spokane—West 715 Mallon, FA 8-3590

### Representatives

Ariz., Phoenix—Sun Valley Electric Mfg., 106 E. Buchanan, AL 8-6448  
 Calif., Fresno—Electrical Equipment Co., Echo & Divisadero, AM 8-6268  
 Hawaii, Honolulu—A. E. Linzer, 1507 Kaipolani Blvd. 9-12291

**STANDARD PRESSED STEEL CO.**, P.O. Box 333, Jenkintown, Pa.  
 Collars (shaft).

### Branch Office

Calif., El Segundo—741 Airport St. OR 8-5382

**STEARNS MAGNETIC PRODUCTS**, 635 So. 28th St., Milwaukee 46, Wis.

Permanent and electro-magnetic pulleys and separators.

### Representatives

Ariz., Phoenix—L. R. Hoag, 35 E. Pierson St. AM 5-0019  
 Calif., Los Angeles—Willard Engineering Co., 2709 So. Hill St. RI 7-0538  
 Calif., San Francisco—Transmission Engineering Co., 427 Bryant St. SU 1-4738  
 Colo., Denver—Schloss & Shubart, 1626 Wazee St. AC 2-2741  
 N. Mex., Albuquerque—Gerald L. Miller, 1404 Martha St. N. E. AX 9-4161  
 Ore., Portland—W. C. Thompson, 6106 N. E. 18th Ave.  
 Utah, Salt Lake City—National Equipment Co., 101 W. Second St. EM 3-8878  
 Wash., Seattle—John H. Marvin Co., 422 First Ave. W. EL 6361  
 Wash., Spokane—W. M. Walters, No. 311 Adams Rd. MA 4-5288

**STEPHENS-ADAMSON MFG. CO.**, 85 Ridgeway Ave., Aurora, Ill.

Bearings (ball), Converting, elevating, screening, crushing and power transmission equipment (coal handling and bulk materials handling equipment), Pillow blocks, Reducers, speed (helical gear).

## STERLING—TULSA WINCH

### Branch Offices

Calif., Los Angeles—2227 E. 37th St. LU 3-1511  
Calif., San Francisco—145 Mission St. EX 2-4218  
Wash., Seattle—909 Joseph Vance Bldg.  
MU 2-3963

### Representatives

Colo., Denver—E. N. Murray, 320 Denver Club Bldg. AL 5-0533  
Colo., Denver—Tompkins Co., 4970 Jackson. DU 8-3658  
Utah, Salt Lake City—C. H. Spencer, 210 W. 33rd St. IN 6-8683

**STERLING ELECTRIC MOTORS, INC.**,  
5401 Telegraph Rd., Los Angeles  
22, Calif. RA 3-6211

Electric motors, Geared motors, Speed reducers,  
Variable speed transmission.

### Branch Offices

Calif., San Francisco—383 Brannan St. SU 1-7997  
Ore., Portland—738 N. W. Glisan St. CA 8-4656  
Wash., Seattle—1712 First Ave. So. MA 4-0723

### Representatives

Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988  
Utah, Salt Lake City—John W. Reynolds,  
1481 S. Main St. HU 4-1133

**STURTEVANT DIV., see WESTINGHOUSE ELECTRIC CORP.**

**TEECO**, 1730 N.W. 25th Ave., Portland 10, Ore., CA 3-5345

Pulleys, Sheaves, Transmission, variable speed.

*See advertisement on page 102*

### Distributors

Calif., Los Angeles—W. H. DelMar Co., 3925 W. Slauson Ave. AX 3-5301  
Calif., Los Angeles—B. B. Supply Co., Inc., 2126 S. Atlantic Blvd. AN 8-3109  
Idaho, Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583  
Idaho, Pocatello—Western Bearings, Inc., 156 So. 3rd St. Phone 3518  
Idaho, Twin Falls—Western Bearings, Inc., 223 - 4th Ave. W.  
Ore., Eugene—Munnell & Sherrill, Inc., 1620 W. 7th Ave. DI 5-8792  
Ore., Newberg—Gibbs Electric Co.  
Ore., Portland—Berg Evans Chain Co., 240 S. W. First Ave. CA 7-5593  
Ore., Portland—McGuire Bearing Co., 213 N. W. 10th Ave. CA 6-2678  
Ore., Salem—Mill Supply Corp., 370 S. Church St. Phone 2-6989  
Wash., Aberdeen—Mill & Logging Supply Co., 313 So. "H" St.  
Wash., Seattle—Buckner-Weatherby Co., 1743 First Ave. So. MA 3-5103  
Wash., Seattle—Northwest Chains & Sprockets, Inc., 3829 E. Marginal Way. MA 2-8482

**TENSOLITE INSULATED WIRE CO., INC.**, W. Main St., Tarrytown, N.Y.

Miniture high temperature wire and cable.

### Representatives

Calif., Los Angeles—1516 N. Gardner St.  
Ariz., Tucson—G. S. Marshall Co., 2030 E. Broadway. EA 7-1501  
Calif., Redwood City—G. S. Marshall, 2015 El Camino Real.  
Calif., San Diego—G. S. Marshall Co., 3525 Fifth Ave. CY 8-8234  
Colo., Denver—Allen I. Williams Co., 2263 So. Albion St. SK 6-9403  
N. Mex., Albuquerque—Allen I. Williams Co., 3221 Silver Ave. S.E. AL 4-9632  
Wash., Seattle—M. K. Widdekind Co., 222 First Ave. No. AT 4-4969

**THERMOID DIV., H. K. PORTER CO., INC.**, Tacony & Comly Sts., Philadelphia 24, Pa.

Drive belting (rubber), V belts (rubber), Clutch faces, Couplings (flexible), Fittings and couplings, Hose (air, hydraulic).

### Branch Offices

Calif., Los Angeles—1100 So. Santa Fe Ave. MA 7-9351  
Calif., San Francisco—129 Sylvester St. So. PL 6-1772  
Wash., Seattle—902 First Ave. So. MU 2-0161

**THOMAS FLEXIBLE COUPLING CO.**,  
Main Ave. and Biddle St., Warren, Pa.

Couplings (flexible, for mechanical power transmission).

### Representatives

Calif., Los Angeles—W. A. Hoppe & Co., 3640 W. 62nd St. AX 3-6072  
Calif., San Francisco—Brooks Equipment Co., 636 Potrero Ave. VA 4-8223  
Colo., Denver—Stearns-Roger Manufacturing Co., 660 Bannock St. AC 2-8484  
Wash., Seattle—Marine & Industrial Supply, Inc., 1123 W. Hanford St. SE 6926

**THOR POWER TOOL CO.**, Aurora, Ill.

Belting, drive (rubber), Hose (air), Motors (air, electric), Tools (portable air, electric), Electric generators.

### Branch Offices

Calif., Los Angeles—6200 E. Slauson Ave. OV 5-8080  
Calif., San Francisco—315 So. Van Ness Ave. UN 1-2045  
Colo., Denver—2704 W. 8th Ave., AL 5-3668  
Wash., Seattle—414 Eighth Ave. No. MU 2-0591

**TIMKEN ROLLER BEARING CO.**,  
1835 Dueber Ave. S.W., Canton 6, Ohio

Tapered roller bearings.

### Branch Offices

Calif., Los Angeles—2727 So. Flower St. RI 7-4141  
Calif., San Francisco—465 Sixth St. EX 2-4041  
Colo., Denver—2140 E. 45th Ave. AM 6-0275  
Wash., Seattle—305 Ninth Ave. No. MA 2-1580

**TITEFLEX, INC.**, Hendee St., Springfield, Mass.

Flexible metal and Teflon hose, Quick-Seal coupling, Electrical connectors, Ignition harnesses.

### Branch Office

Calif., Santa Monica — 2328 Broadway. EX 3-0525

**TON-TEX CORP.**, 247 Pearl St., N.W. Grand Rapids 2, Mich.

Belting (power transmission), V-Belt segments (flat and adjustable).

*See advertisement on page 123*

### Branch Office

Calif., San Jose — 1180 Auzerais Ave. CY 3-3230

**TORRINGTON CO.**, 59 Field St., Torrington, Conn.

All types of ball and roller bearings.

### Branch Offices

Calif., Los Angeles—4433 Crenshaw Blvd. AX 3-6139  
Wash., Seattle—1731 First Ave. So. MA 3-2252

### Representatives

Ariz., Phoenix—Edward D. Maltby Co., 424 W. Jefferson St.  
Calif., Baldwin Park — Valley Industrial Supply, Inc., 5140 Rivergrade Rd.  
Calif., Colton—Valley Industrial Supply, 401 So. Eighth St.  
Calif., Fresno—General Bearings Co., 2820 Church Ave.  
Calif., Fresno—George M. Philpott Co., 2376 Railroad St.  
Calif., Long Beach—Bay City Bearing Co., Inc., 709 W. 16th St.  
Calif., Long Beach — Edward D. Maltby Co., 2041 W. Anaheim Blvd.  
Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.  
Calif., Los Angeles—General Bearings Co., 2017 Santa Fe Ave.  
Calif., Los Angeles — Edward D. Maltby Co., 1940 So. Figueroa St.  
Calif., Maywood — Bay City Bearing Co., Inc., 5275 Atlantic Blvd.  
Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St.  
Calif., Modesto—Geiger Iron Works, Inc., 124 Willow  
Calif., Modesto—Girardi Bearing Co., 717 I St.  
Calif., Oakland — Bearing Industries, Inc., 181 Tenth St.  
Calif., Oakland—George M. Philpott Co., 2928 Poplar St.  
Calif., Ontario—Valley Industrial Supply, 1170 W. Holt Blvd.  
Calif., Sacramento — Bearing House, 318 16th St.  
Calif., Sacramento — Geiger Iron Works, 2425 24th St.  
Calif., Sacramento — George M. Philpott Co., 6260 Folsom Blvd.

Calif., Salinas—Girardi Bearing Co., 257 John St.

Calif., San Diego—Edward D. Maltby Co., 745 15th St.

Calif., San Francisco—All Bearing Service, Inc., 456 Brannan St.

Calif., San Francisco—Bearing Industries, Inc., 266 Bay Shore Blvd.

Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St.

Calif., San Francisco—George M. Philpott Co., 1060 Bryant St.

Calif., Stockton—Bearing Sales Co., 505 S. Wilson Way

Calif., Stockton—Geiger Iron Works, Inc., Scots Ave. and Pilgrim St.

Colo., Denver—Colorado Bearing Co., 1650 Blake St.

Ida., Boise — Western Bearings, Inc., 520 Front St.

Ida., Lewiston—Jameson Machine Supply, 12th and Idaho Sts.

Ida., Pocatello—Western Bearings, Inc., 156 So. Third

Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W.

Mont., Billings—Bearings Supply Co., Second Ave. N. at 12th St.

Mont., Billings — Power Transmission Equipment, 15 No. 33rd St.

Mont., Butte—Dudley's Auto Parts, 12 E. Galena St.

Mont., Great Falls—Carl Weissman & Sons, 300 Third Ave. So.

Nev., Reno—Styris-Sutton Co., 622 So. Virginia St.

N. Mex., Albuquerque—Montezuma Bearing Service, 1413 First St. N.W.

N. Mex., Farmington—Vance Supply Co., 813 Schofield Lane.

N. Mex., Hobbs—Vance Supply Co., 211 So. Grimes

Ore., Coos Bay—Bearing Supply Co., 894 So. Broadway

Ore., Eugene—Bearings Sales & Service, Inc., 225 Seventh Ave. W.

Ore., Eugene—Bearing Supply Co., 234 W. Sixth Ave.

Ore., Klamath Falls — Specialized Bearing Service, 1440 Main St.

Ore., Portland—Bearings Sales & Service Inc., 1848 N.W. Hoyt St.

Ore., Portland—General Bearing Co., 325 N.W. 15th St.

Ore., Portland—McGuire Bearing Co., 213 N.W. Tenth Ave.

Ore., Portland—George M. Philpott Co., 2353 N.W. 21st Ave.

Ore., Roseburg—Bearings Sales & Service, Inc., 460 N.E. Garden Valley Blvd.

Ore., Roseburg—Bearing Supply Co., 1338 S.E. Stephens St.

Utah, Salt Lake City—Bearing Engineering & Sales Co., 756 So. Second W.

Utah, Salt Lake City—Utah Bearing Co., 626 S.W. Temple.

Wash., Aberdeen—Bearing Sales & Service, Inc., 317 E. Market St.

Wash., Everett—All Bearing Service, Inc., 1106 Hewitt Ave.

Wash., Everett—Bearing Sales & Service, Inc., 2903 Grand Ave.

Wash., Longview — BESCO of Longview, 1005 15th Ave.

Wash., Longview — Bearing Sales & Service, Inc., 743 Commerce St.

Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St.

Wash., Port Angeles—Bearing Sales & Service, Inc., Valley at Second

Wash., Seattle—All Bearing Service, Inc., 7471 Fourth Ave. So.

Wash., Seattle—Peso, Inc., 2548 Airport Way

Wash., Seattle — Bearing Sales & Service, Inc., 2908 Sixth Ave. So.

Wash., Spokane—Empire Bearing Co., E. 3107 Trent Ave.

Wash., Tacoma—All Bearing Service, Inc., 2324 E. 11th St.

Wash., Tacoma—Bearing Sales & Service, Inc., 1743 Jefferson Ave.

**TULSA WINCH DIV., VICKERS, INC.**,  
815 E. First St., Tulsa 20, Okla.

Power take-offs, Winches, Speed reducers.

### Distributors

Ariz., Phoenix—Auto Safety House, 238 W. Jefferson, Phone 4-5545

Ariz., Phoenix—Welch Mfg. Co., 533 W. Jefferson, AL 8-0276

Calif., Los Angeles—Standard Auto-Body Co., Inc., 4900 So. Soto St. LY 3-1471

Calif., Lynwood—Rankin Bros., 11090 So. Alameda, NE 6-1929

Calif., San Francisco—Modern Vehicle Co., 2044 Bryant St. AT 2-7414

Colo., Denver — Winter-Weiss Co., 2201 Blake St. MA 3-6233

Ida., Boise—Lang Co., 420 No. Curtis Rd. Phone 6311-W

Mont., Billings — Great Northern Tool &

Supply Co., 2224 Minnesota Ave. Phone 2-2175

Mont., Great Falls—Smith Equipment Co., 820 Ninth St. N. No. Phone 2-1713

## TURLOCK—VICTOR BALATA

Mont., Kalispell—Industrial Supply Div., Forest Products Co., 175 N.E. Railroad St. Phone 5900  
N. Mex., Albuquerque—Timpie Bros., 4300 Second N.W. Phone 4-3444  
N. Mex., Farmington—C & K Industrial Supply, 635 E. Main, DA 5-5621  
N. Mex., Hobbs—Watson Truck & Supply, P.O. Box 1288, EX 3-3161  
Ore., Eugene—Western Equipment Co., 1360 W. First St. EU 4-4265  
Ore., Portland—Western Equipment Co., 2244 N.W. Savier St. CA 8-4128  
Utah, Salt Lake City—Lang Co., Inc., First So. and Second W.DA 8-9341  
Wash., Seattle—Transport Trailer & Equipment Co., Inc., 3400 Sixth Ave., So. MU 2228  
Wash., Spokane—Critzer Equip. Co., E. 3804 Front St.  
Wyo., Casper—Emrick & Hill Engine & Equipment Co., 1701 E. Yellowstone. Phone 2-5341

### TURLOCK IRON & MACHINE WORKS, P.O. Box 609, Turlock, Calif.

Cylinders (air, hydraulic).

*Representatives*

Calif., Stockton—Grether & Grether, P.O. Box 47, HO 2-4124  
Calif., Whittier—Grether & Grether, P.O. Box 1036, Perry Annex, OW 7-7812

### TUTHILL PUMP CO., 939 E. 95th St., Chicago 19, Ill.

Positive displacement internal-gear rotary pumps.

*Representatives*

Calif., Los Angeles—Wagner Hydraulic Equipment Co., 10814 Santa Monica Blvd. BR 2-2091  
Wash., Seattle—Atlas Equipment Co., 620 Maynard, MU 2-6232

### TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis.

Clutches, Fluid couplings, Friction and fluid drives for industrial applications, Gears (reverse and reduction), Power take-offs, Torque converters.

*Branch Office*

Calif., Los Angeles—2950 Leonis Blvd. LO 8-3309

*Representatives*

Ariz., Phoenix—Arizona Equipment Sales, Inc., 2812 Grand Ave.  
Calif., Bakersfield—California Truck & Industrial Equipment Co., 2810 Brundage Lane.  
Calif., Huntington Park—N. A. D'Arcy Co., 7535 Marbrisa St., P.O. Box 447  
Calif., Sacramento—California Equipment Co., 2231 Fourth St.  
Calif., San Francisco—California Equipment Co., 660 Bryant St.  
Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St.  
Colo., Denver—Industrial Equipment Co., 4989 Jackson St.  
N. Mex., Hobbs—Vance Supply Co., 211 So. Grimes St.  
Ore., Portland—Hydra-Lines, Inc., 511 S.E. Market St.  
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave.  
Utah, Salt Lake City—Diesel Electric Service & Supply, 652 W. 17th St.  
Wyo., Casper—Emrick & Hill Engine & Equipment Co., 1701 E. Yellowstone  
Wash., Seattle—Chain Gear, Inc., 822 First Ave. So.  
Wash., Spokane—Bitco, Inc., E. 4115 Trent Ave.

### UNION CARBIDE CORP., see NATIONAL CARBON CO., a div.

### UNION CHAIN & MFG. CO., Edgewater Ave., Sandusky, Ohio

Bolting, Chains (roller, silent transmission, engineering, drive and conveying), Couplings (chain type), Sprockets.

*Branch Offices*

Ore., Portland—208 S.W. Stark St. CA 8-9211

*Representatives*

Calif., Los Angeles—American Chain & Gear, 2451 E. 57th, LU 1-7215  
Calif., San Francisco—Charles A. Fowler Co., 899 Bryant St. UN 8-5010  
Calif., Stockton—Stockton Iron Works, Harrison and Lindsay Sts. HO 6-7091  
Colo., Denver—Power Transmission, Inc., 4965 Jackson St. DU 8-1681  
Mont., Great Falls—Brack Motor Supply Co., 104-106 First Ave. Phone 4-4346  
Mont., Missoula—Power Transmission, Inc., 802 Toole Ave. Phone 9-4188  
N. Mex., Albuquerque—Union Industrial Corp., 531 Haines Ave. N.W. CH 7-0481  
N. Mex., Carlsbad—Union Industrial Corp.,

112 E. Mermod, TU 5-2187  
Ore., Eugene—Munnell & Sherrill, Inc., 1450 W. 7th St. Phone 4-3287  
Ore., Portland—Munnell & Sherrill, Inc., 400 S.W. First Ave. CA 8-7365  
Ore., Roseburg—Munnell & Sherrill, Inc., 1958 S.E. Stephens, OR 3-3508  
Utah, Salt Lake City—Lundin & May Foundry, 454 W. 5th St. No. Phone 9-2005  
Wash., Longview—Longview Equipment Co.  
Wash., Seattle—Bearing Engineering & Supply, 2548 Airport Way. MA 2744  
  
**UNITED BEARING CO. OF CALIF.,**  
756 E. Washington Blvd., Los Angeles 21, Calif.  
Bearings, Roller chains, Sprockets.

### UNIT MFG. CO., 18 W. 26th St., Minneapolis 4, Minn.

Controls (hydraulic), Cylinders (air, hydraulic), Motors (hydraulic), Pumps (hydraulic power), Valves (hydraulic power line).

*Representatives*

(Contact factory for names and addresses of representatives in the West)

### U. S. ELECTRICAL MOTORS, INC.,

200 E. Slauson Ave., Los Angeles 54, Calif.

Electric motors, Gear motors, Variable speed motors.

*Branch Offices*

Ariz., Phoenix—114 E. Roosevelt St. AL 8-2693  
Calif., Bakersfield—1817 H. St. FA 3-7369  
Calif., Fresno—155 Van Ness Ave. AM 6-0689  
Calif., Sacramento—719 K St. HI 6-6556  
Calif., San Francisco—564 Fourth St. GA 1-7625  
Calif., San Jose—442 Park Ave. CY 3-8580  
Colo., Denver—40 W. 49th Ave. MA 3-0281  
Utah, Salt Lake City—816 S. Main St. EM 4-6219  
Wash., Seattle—3427 4th Ave., So. MA 4-0614

### UNITED STATES GAUGE DIV., AMERICAN MACHINE & METALS, INC., Sellersville, Pa.

Instruments (measuring and testing).

*Branch Offices*

Calif., Hayward—24692 Townsend Ave. JE 8-6118  
Calif., Los Angeles—11973 San Vicente Blvd. GR 2-9584  
  
*Representatives*  
Calif., Berkeley—J. S. Page Co., 570 Coventry Rd. LA 4-5517  
Calif., Los Angeles—W. R. Ladewig Co., 5608 E. Washington Blvd. RA 3-6371  
Calif., San Francisco—E. C. Cooley Co., 1136 Folsom St. UN 3-2211  
Colo., Denver—E. P. Cook Co., 1863 Wazee St. KE 4-2371  
Wash., Seattle—Instrument Laboratory, 934 Elliott Ave. W. AL 5850

### UNITED STATES RUBBER CO., MECHANICAL GOODS DIV., 1230 Ave. of the Americas, New York 20, N.Y.

Belts (conveyor, drive, V-belts, all rubber or rubber-fabric, rubber timing), Hose, Switchboard matting, Lineman's equipment (rubber gloves, clothing).

*Branch Offices*

Calif., Los Angeles—Soto & E. 46th Sts.  
Calif., San Francisco—6025 Third St.  
Colo., Denver—4800 Colorado Blvd.  
Ore., Portland—630 N.W. Tenth Ave.  
Utah, Salt Lake City—1987 S. Second W. St.  
Wash., Seattle—5900 First Ave. So.

### UNIVERSAL METAL HOSE CO., 2133 S. Kedzie Ave., Chicago 23, Ill.

All-metal flexible hose, tubing and conduit.

*Representatives*

Calif., Los Angeles—Guy L. Warden & Sons, 209 W. 12th St. RI 7-0541  
Calif., San Francisco—Calpac Equipment Co., 50 Hawthorne St. GA 1-0697  
Mont., Billings—Clapper Co., Inc., P.O. Box 3034. Phone 2-5511  
Ore., Portland—Industrial Products Co., 339 N.W. 12th Ave. CA 8-1677  
Wash., Spokane—Interstate Ind. Sales, W. 1725 Broadway. FA 7-6525

### TURLOCK—VICTOR BALATA

**V-BELT CLUTCH CO.,** 418 No. Western Ave., Los Angeles 4, Calif. HO 5-5082

Ball-Lok V-belt clutches, two-speed and reverse drive clutches for use on gas engines, electric motors, high speed intermittent clutching and industrial drives to 5 hp.

*Distributors*

Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.  
Colo., Denver—Western Belting Co., 1720 Wazee St.  
Wash., Seattle—Chain Gear, Inc., 820-824 First Ave. So.

### VERNON TOOL CO., LTD., 1101 Meridian Ave., Alhambra, Calif.

Governed infinitely variable speed reducer.

### VERSAT PRODUCTS CO., INC., 249 Scholes St., Brooklyn 6, N.Y.

Versa valves.

*Representatives*

Calif., Los Angeles—E. D. Sweetland Co., 5403 Sheila St. RA 3-0117  
Calif., San Francisco—E. D. Sweetland Co., 151 Mission St. GA 1-2663  
Ore., Portland—Ray Bobbs Air-Draulics, 218 S.E. 12th Ave. BE 2-6133  
Wash., Seattle—1250 First Ave. So.

### VICKERS, INC., Administrative & Engineering Center, Detroit 32, Mich.

Complete hydraulic power systems, hydraulic pumps, transmissions, valves, motors, cylinders, power units, steering boosters.

*Branch Offices*

Calif., Berkeley—920 Grayson St. AS 3-4997  
Calif., El Segundo—2160 E. Imperial Hwy. OR 8-2503  
Calif., Torrance—3201 Lomita Blvd. DA 6-8550  
Wash., Seattle—623 Eighth Ave. So. MU 6-6950

### VICKERS, INC., Electric Products Div., 1815 Locust St., St. Louis 5, Mo.

Clutches, Controls (compressed air), Instruments (measuring and testing), Rectifiers.

*Branch Office*

Calif., Torrance—3201 Lomita Blvd. DA 6-8550

*Representative*

Colo., Denver—Hubert Kaub & Co., 1025 Santa Fe Dr. MA 3-4606 (clutches only)

### VICKERS, INC., see also TULSA WINCH DIV.

### VIKING PUMP CO., Fourth and Koch Sts., Cedar Falls, Iowa

Pumps (hydraulic power, rotary).

*See advertisement on page 125*

*Representatives*

Calif., Los Angeles—Viking Pump Co. of Los Angeles, 4432 Long Beach Ave. AD 3-8165  
Calif., Millbrae—Delaval Pacific Co., 201 E. Millbrae Ave. OX 7-4001

### VICTOR BALATA & TEXTILE BELTING CO., 53 Park Pl., New York 7, N.Y.

Belting for machinery purposes (solid woven, canvas stitched, Neoprene, Hycar, balata).

*Factory Representatives*

Calif., Orinda—Hugh Reed, 45 Loma Vista Dr.  
Ore., Portland—S. Alex Turnley, 4433 N.E. Fallng St.

*Distributors*

Calif., Fresno—Elliott Mfg. Co., 1734 Ventura St.

Calif., Los Angeles—Degen Fiege Co., 4559 E. Sheila St.

Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St.

Colo., Denver—Western Belting Co., 1720 Wazee St.

Ore., Portland—Goodyear Rubber & Asbestos Co., 205 N.W. Fifth Ave.

Utah, Salt Lake City—Mountain States Rubber Co., 131 Social Hall Ave.

Wash., Everett—Washington Belting & Rubber Co., 2023 Grand Ave.

## W-S FITTINGS—WESTINGHOUSE

Wash., Seattle—Washington Belting & Rubber Co., 2761 First Ave. S.  
Wash., Spokane—Nott-Atwater Co., S. 157 Monroe St.  
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.

**W-S FITTINGS WORKS, a div. of H. K. PORTER CO., INC., FORGE & FITTINGS DIV., P.O. Box 95, Roselle, N.J.**

### Hydraulic pumps and jacks.

*Branch Offices*  
Calif., Anaheim—630 Amboy St. KE 5-5475  
Wash., Seattle—501 Jones Bldg. MA 2-3496  
*Representatives*  
Sold through leading distributors everywhere.

**WADSWORTH ELECTRIC MFG. CO., Covington, Ky.**

Circuit breakers, Controls (electric), Load centers, Panelboards (electric), Service equipment, Switches (electric, safety), Wiring troughs.

*Representatives*  
Calif., Los Angeles—Agencies Co., 836 Tracton Ave. MI 1925  
Calif., San Francisco—Hodges & Glomb, Inc., 921 Bryant St. UN 1-2367  
Colo., Denver—L. S. Reed & Co., 1018 Lawrence St. AL 5-1777  
Ore., Portland—Bruce-Emmett Co., 830 S.E. Alder St. BE 2-8117

**WALDES KOHINOOR, INC., 47-16**

Austel Pl., Long Island City 1, N.Y.  
Retaining rings, Pliers, Applicators, Dispensers, Grooving tools, Industrial fasteners.

*Branch Offices*  
Calif., Los Angeles—423-27 E. 12th St. RI 9-8271  
Calif., San Francisco—2270 N. Point. WA 2-0723  
*Distributors*

Ariz., Phoenix—Edward D. Maltby Co., Inc., 424 W. Jefferson St. AL 4-9227  
Calif., Fresno—General Bearings, 2820 Church Ave. AD 7-7104  
Calif., Long Beach—Edward D. Maltby Co., Inc., 2041 W. Anaheim St. HE 2-5494  
Calif., Los Angeles—Griffin Coil Spring Co., Inc., 196 E. Jefferson Blvd. AD 3-5206  
Calif., Los Angeles—Edward D. Maltby Co., Inc., 1840 S. Figueroa St. RI 7-5611  
Calif., Maywood—Edward D. Maltby Co., Inc., 4035 E. 52nd St. LU 2-5304  
Calif., Oakland—Bearing Engineering Co., 1018 Harrison St. TW 3-2251  
Calif., Sacramento—Bearing House, 318 16th St. GI 2-1087  
Calif., San Diego—Edward D. Maltby Co., Inc., 745 Fifteenth St. BE 3-7278  
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500  
Colo., Denver—Bearings Service & Supply Co., 4433 Claude Ct. CA 2-5991  
Ida., Idaho Falls—Bearings Service & Supply Co., Airport Rd. Phone 3150  
Mont., Missoula—Industrial Bearing Co., 223 W. Alder St. Phone 3-3723  
Ore., Eugene—Bearing Sales & Service, Inc., 228 Seventh Ave. W. DI 5-0325  
Ore., Portland—Bearing Sales & Service, Inc., 1645 N.W. Hoyt St. CA 3-6301  
Ore., Roseburg—Bearing Sales & Service, 460 N.E. Garden Valley Rd. OR 2-2603  
Utah, Salt Lake City—Bearings Service & Supply Co., 1207 S. Main St. IN 6-8766  
Wash., Aberdeen—Bearing Sales & Service, Inc., 317 E. Market St. AB 5820  
Wash., Everett—Bearing Sales & Service, Inc., 2003 Grand Ave. CE 1185  
Wash., Longview—Bearing Sales & Service, Inc., 743 Commerce St. HA 5-1850  
Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St. LI 7-2421  
Wash., Port Angeles—Bearing Sales & Service, Inc., 1018 at Second. GL 2-2307  
Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331  
Wash., Spokane—Bitco, Inc., E. 4115 Trent Ave. KE 5-1611  
Wash., Tacoma—Bearing Sales & Service, Inc., 1743 Jefferson Ave. FU 3-5363

**WALWORTH CO., 750 Third Ave., New York 17, N.Y.**

Valves, Fittings.  
*Branch Offices*  
Calif., Los Angeles—2655 So. Eastland Ave. RA 3-6191  
Calif., San Francisco—155 Montgomery St. GA 1-3950  
Wash., Seattle—535 Securities Bldg. MA 3-0822

**WARD LEONARD ELECTRIC CO., Mt. Vernon, N.Y.**

Electric motor controls, Resistors, Relays, Rheostats.

*Branch Office*  
Calif., Los Angeles—1605 E. Olympic Blvd. MA 9-3595

### Representatives

Ariz., Tucson—Central Station Equipment Co., 2323 Aviation Hwy. Phone 3-2493

Calif., San Francisco—L. F. Church Co., 750 Natoma St. UN 1-2840

Colo., Denver—Mark G. Mueller, 1844 Blake St. AC 2-3515

Ore., Portland—Northwestern Agencies, Inc., 2941 N.W. Quimby. CA 7-5004

Utah, Salt Lake City—Leonard M. Slusser, 318 Dooly Bldg. Phone 5-2322

Wash., Seattle—Northwestern Agencies, Inc., 4130 First Ave. MA 3-8882

**WARNER ELECTRIC BRAKE & CLUTCH CO., Beloit, Wis.**

Electric brakes, clutches and controls (torques from 2 lb. in. to 700 lb. ft.)

### Branch Offices

Calif., Pasadena—116 S. Euclid, Suite 204. RY 1-7145, -46

Calif., Walnut Creek—1525 Locust St. YE 5-4504

### Representatives

Ariz., Phoenix—Semon Bearing & Supply Co., Inc., 325 N. Third Ave. AL 8-7566

Calif., Los Angeles—J. W. Minder Chain & Gear, 6011 S. Central. AD 3-7221

Calif., Sacramento—Geiger Iron Works, 14th & S. St.

Calif., San Francisco—Adam-Hill Co., 142 Utah Ave.

Calif., Stockton—Geiger Iron Works, 1140 E. Scotts Ave. HO 6-8623

Colo., Denver—Power Transmission, Inc., 4956 Jackson St. DU 8-1681

Ore., Portland—J. W. Minder Chain & Gear, 307 S. E. Hawthorne Blvd. BE 6-1131

Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So.

**WATERMAN ENGINEERING CO., 725 Custer, Evanston, Ill.**

Controls (hydraulic), Valves (hydraulic power line).

### Representatives

Calif., Burbank—H. E. Webb, 1307 No. San Fernando Blvd. VI 9-4144, -17

Calif., San Francisco—E. D. Sweetland, 151 Mission St. GA 1-2662

Wash., Seattle—E. D. Sweetland, 1250 First Ave. So. MA 2-1167

**WELTRONIC CO., 19500 W. Eight Mile Rd., Detroit, Mich.**

Weldronic fusion welder control, Co-Mo-Trol d.c. motor drive, Digital precision controls, Resistance welding controls, Electronics devices.

### Branch Office

Calif., Inglewood—9431 11th Ave., OR 8-1542

**WESTERN BELTING & MECHANICAL, INC., 3525 E. Emery St., Los Angeles 23, Calif. AN 1-7117**

Bases (motor), Bearings (babbitted, ball, roller, sleeve), Drive belting (chain or link), Drive belting (composition, leather, rubber), V Belts (composition, leather, rubber), Chains for drives (detachable link, roller, silent transmission), Clutches, Collars (shaft), Couplings (shaft), Fittings and couplings (air, hydraulic), Fluid drives (Flexy-dyne), Gearmotors, Hose (air, flexible metallic, hydraulic), Lacing (belt), Motors (variable speed), Pillow blocks, Pulleys, Sheaves, Sprockets.

### Branch Office

Calif., Anaheim—114 A Orangethorpe. LA 6-7771

**WESTERN BOILER CO., 1600 No. Indiana St., Los Angeles 63, Calif.**

### Representatives

Alaska, Anchorage—Hasco, Inc., 119 E. Sixth St.

Ariz., Phoenix—Combustion Equipment Co., 2401 E. Elm St.

Calif., El Cajon—County Burner Co., 1282 E. Main St.

Calif., Fresno—Muldoon Co., 1537 Thesta.

Calif., Fresno—Service Welding & Boiler Co., 250 Broadway.

Calif., Los Angeles—Duncan Engineering Co., P. O. Box 8808, Crenshaw Sta.

Calif., Los Angeles—Fred S. Renaud Co., 1600 No. Indiana St.

Calif., San Diego—Frank Galindo, 3278 Main St.

Calif., San Francisco—Frazar & Hansen, Ltd., 301 Clay St.

Calif., San Francisco—Western Boiler Engineers, 1139 Mission St.

Colo., Denver—Kilian Gas Burner Co., 1240 So. Bannock St.

Colo., Denver—Longero, Inc., 3410 Brighton Blvd.

Ore., Portland—Campbell-Norquist & Co., 77 N. E. Holladay St.

Utah, Salt Lake City—Gritton & Wilde, 205 Dooley Bldg.

Utah, Salt Lake City—Sherman Nabaum Co., 4777 So. 13th E.

Wash., Seattle—Evans Products, 3049 Market St.

Wash., Seattle—Tom C. Langdon, 73 Vine St.

Wash., Spokane—Atlas Boiler & Equipment Co., W. 29 Trent Ave.

Wash., Wenatchee—Wells & Wade, Inc., P. O. Box 1161

Wash., Yakima—Saar Heating & Engr. Co., 717 W. Yakima.

**WESTERN CONVEYOR CO., P.O. Box 357, Boise, Idaho. Ph. 3-5464**

Drives, motorized, Batch Plants, Drives, conveyor Silos, cement, Conveyors, all types, Take-Ups, Bins, bulk storage, portable and stationary.

### Representatives

Calif., Bakersfield—Brown-Bevis Industrial Equip. Co., 1419 Union Ave. FA 5-1239

Calif., Los Angeles—Brown-Bevis Industrial Equip. Co., P.O. Box 2276, Terminal Annex, PA 8-7161—RA 3-6321

Calif., Riverside—Brown-Bevis Industrial Equip. Co., 1575 E. 8th St. OV 6-2121

Calif., San Diego—Brown-Bevis Industrial Equip. Co., 701 E. Harbor Dr. BE 4-2833

Mont., Kalispell—Mountain Tractor Co. SK 6-4388

Mont., Missoula—Mountain Tractor Co., 1345 W. Broadway, LI 3-6651

Ore., Eugene—Eoff Electric Co., 556 Char-nel St. DI 5-4349

Ore., Portland—Eoff Electric Co., 509 N.W. 10th Ave. CA 2-9411

Ore., Portland—Feenaughty Machinery Co., 112 S.E. Belmont, BE 2-2186

Ore., Salem—Eoff Electric Co., 156 Front N.E. EM 3-9251

Wash., Seattle—Feenaughty Machinery Co., 1026 6th South, MA 3-7808

Wash., Spokane—Feenaughty Machinery Co., 715 N. Division, FA 5-2514

Wash., Vancouver—Eoff Electric Co., 404 Fairmont Rd. NE 6-2427

**WESTERN GEAR CORP., 2600 E. Imperial Highway, Lynwood, Calif. NE 6-2161**

Electrical equipment, Gearmotors, Gears (special machinery of all types and sizes), High speed units, Increases (speed), Motors (air, electric, hydraulic, variable speed), Reducers, speed (bevel gear, helical gear, planetary gear, shaft mounted, spur gear, worm gear), Transformers (rotary), Transmission, variable speed.

### Branch Offices

Calif., Los Angeles—2600 E. Imperial Hwy., Lynwood, NE 6-0911

Colo., Denver—901 Sherman, TA 5-2192

Ore., Portland—811 S. W. Sixth Ave. CA 2-9277

Wash., Seattle—217 Ninth Ave. So. MA 2-0062

### Representatives

Calif., San Bernardino—Reliable Bearing & Supply, 263 So. E St. TU 8-6565

Colo., Denver—Stearns Roger Mfg. Co., 660 Bannock St. AC 2-8494

N. Mex., Carlsbad—Carlsbad Supply Co., 501 Park Dr.

**WESTERN INSULATED WIRE CO., 2425 E. 30th, Los Angeles 58, Calif.**

LU 7-7103

Portable power cords, Portable power cables, Asbestos insulated wires and cables, Welding cable, Power cables (Style RR).

### Representatives

Calif., San Francisco—Curry Co., 305 King St. YU 2-0788

N. Mex., Albuquerque—John Carder, 1624 No. 1st St. CH 2-3581

Ore., Portland—Geo. M. Roth, 1504 N.W. Johnson St. CA 7-5654

Wash., Seattle—J. H. Stumph, 1000 4th Ave. So. MU 2-5232

**WESTINGHOUSE ELECTRIC CORP., STURTEVANT DIV. Damon St., Hyde Park, Boston, Mass.**

Fans and blowers for forced and induced draft fire power generation.

### Branch Offices

Calif., Los Angeles—600 St. Paul Ave. MA 6-3881

Calif., San Francisco—410 Bush St. EX 2-5353

Colo., Denver—55 W. Fifth Ave. KE 4-8121

Ore., Portland—309 S. W. Sixth Ave. CA 2-9151

Wash., Seattle—1318 Fourth Ave. MA 4-6050

### Representative

Utah, Salt Lake City—Williams, Gritton & Wilde, 204 Dooly Bldg. EM 4-6421

**WHEELER, FOSTER, CORP.**, 666 Fifth Ave., New York 19, N. Y.  
Boilers & boiler equipment, Controls (compressed air, electric, electric motor, hydraulic), Regulators (pressure).

*Branch Offices*

Calif., Los Angeles—714 W. Olympic Blvd. RI 9-7839  
Calif., San Francisco—461 Market St. GA 1-6042  
Wash., Seattle—Vance Bldg., Third & Union. MA 2-7434

**WHITNEY BLAKE CO.**, 1565 Dixwell Ave., New Haven 14, Conn.  
Electric wire and cable.

*Branch Offices*

Calif., Los Altos—P.O. Box 1362, WH 8-2122  
Calif., Los Angeles—12243 Shetland Lane. GR 6-1011  
Wash., Seattle—4041 90th Ave. S.E., Mercer Island. AD 2-8378

*Representatives*

Ariz., Phoenix—Graybar Electric Co.  
Ariz., Tucson—Graybar Electric Co.  
Calif., Fresno—Graybar Electric Co.  
Calif., Long Beach—Graybar Electric Co.  
Calif., Los Angeles—Gough Industries, Inc., 819 E. First St.  
Calif., Los Angeles—Graybar Electric Co., 210 Anderson St.  
Calif., Oakland—Graybar Electric Co.  
Calif., Sacramento—Graybar Electric Co.  
Calif., San Bernardino—Graybar Electric Co.  
Calif., San Diego—Graybar Electric Co.  
Calif., San Diego—Pacific Wholesale Electric Co., 702 State St.  
Calif., Santa Ana—Graybar Electric Co.  
Ida., Boise—Graybar Electric Co.  
Mont., Butte—Graybar Electric Co.  
Ore., Eugene—Graybar Electric Co.  
Ore., Portland—Graybar Electric Co.  
Ore., Portland—North Coast Electric Co.  
Utah, Salt Lake City—Graybar Electric Co.  
Wash., Seattle—Graybar Electric Co.  
Wash., Spokane—Graybar Electric Co.  
Wash., Tacoma—Graybar Electric Co.

**WOOD'S SONS, T. B., CO.**, 600 Fifth Ave., Chambersburg, Pa.  
V-belt drives, Timing belt drives, Ultra-V drives, "Sure-Flex" flexible couplings, Variable speed V-drives, Ball bearing pillow blocks, Flange units.

*Representatives*

Calif., San Francisco — J. D. Christian Engineers, 480 Potrero Ave.

Calif., South Gate — Power Trans. Equip. Co., 4501 Firestone Blvd.  
Colo., Denver — Union Bearings & Trans. Co., 1622 Wazee St.

**WORTHINGTON CORP.**, 401 Worthington Ave., Harrison, N. J.

Air compressors (portable, stationary), Belts, V (rubber), Condensers (barometric, surface stream), Ejectors (steam-jet air), Engines, Feedwater heaters, Generators (electric), Increasers (speed), Pumps, power (horizontal and vertical), Pumps (condensate, boiler feed), Reducers, speed (helical gear), Sheaves, Transmission, variable speed.

*Branch Offices*

Calif., Los Angeles—5075 Santa Fe Ave. LU 3-6451  
Calif., San Francisco—224 Townsend St. GA 1-4906  
Colo., Denver—1640 Blake St. TA 5-7284  
Ore., Portland—1815 S.E. Seventh Ave. BE 2-1158  
Utah, Salt Lake City—118 Social Hall Ave. EM 4-6591  
Wash., Seattle—2616 Western Ave. MA 4218

**WORTHINGTON CORP.**, see also **MASON-NEILAN**, a div.

**YARNALL-WARING CO.**, 102 E. Mermaid Lane, Philadelphia 18, Pa.  
Boiler blow-off valves, Weldbond valves, Digestor blow valves, Remote liquid level indicators, Expansion joints, Boiler water gages, Pipe line strain-ers, Impulse steam traps, Spray nozzles.

*Representatives*

Ariz., Phoenix — Geo. S. Thomson Co., 915 So. Central Ave. AL 8-4591  
Calif., Eureka — Eureka Boiler Works & Acme Foundry Co., Foot of S St. HI 3-1681  
Calif., Los Angeles—Bogart-Bullock Corp., 6010 So. Normandie Ave. PL 1-6129  
Calif., Los Angeles — Elder Eng. Sales Co., 2708 So. Hill St. RI 9-5259  
Calif., Los Angeles — Republic Supply Co. of California, 2604 So. Eastlund Ave. RA 3-2511  
Calif., San Francisco — E. S. Bottomly Co., 1061 Howard St. HE 2-2815  
Calif., San Jose—Pacific Hardware & Steel Co., Inc., 950 No. Seventh St. CY 2-1362  
Calif., San Leandro — Republic Supply Co. of California, 1919 Williams St. EL 7-2211

## CLASSIFIED PRODUCTS SECTION

### AIR COMPRESSORS

#### portable

Binks Manufacturing Co.  
Chicago Pneumatic Tool Co.  
Cornelius Co.  
Curtis Manufacturing Co.  
DeVilbiss Co.  
Gardner-Denver Co.  
Gast Mfg. Corp.  
Ingersoll-Rand Co.  
Jaeger Machine Co.  
Joy Manufacturing Co.  
Ledeon Manufacturing Co.  
M & E Mfg. Co.  
Modernair Corp.  
Quincy Compressor Co.  
Scaife Co.  
Schramm, Inc.  
Yeomans Bros. Co.

### AIR COMPRESSORS

#### stationary

Allis-Chalmers Mfg. Co.  
Binks Manufacturing Co.  
Brunner Div.  
Chicago Pneumatic Tool Co.  
Curtis Manufacturing Co.  
DeVilbiss Co.  
Gardner-Denver Co.  
Ingersoll-Rand Co.  
Joy Manufacturing Co.  
Ledeon Manufacturing Co.  
Lincoln Eng. Co. of Calif.  
M & E Mfg. Co.  
Roots-Conversville Blower Div.  
Scaife Co.  
Schramm, Inc.  
Yeomans Bros. Co.

### BASES—motor

Allis-Chalmers Mfg. Co.  
Allis, Louis, Co.  
American Pulley Co.  
Automatic Motor Base Co.  
Gerbings Mfg. Corp.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Western Belting & Mechanical, Inc.

### BATTERIES

Burgess Battery Co.  
C & D Batteries, Inc.  
Cannon Electric Co.  
Edison, Thomas A., Industries  
Exide Industrial Div.  
Gates Rubber Co.  
Gould-National Batteries, Inc.  
Laher Spring & Tire Co.  
National Carbon Co.  
U.S. Rubber Co.

### BEARINGS—babbitted

Associated Gear & Machine Co.  
Bearing Sales Co.  
Bunting Brass & Bronze Co.  
Dick, R. & J. Co., Inc.  
Dodge Manufacturing Corp.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Stephens-Adamson Mfg. Co.  
United Bearing Co.  
Western Belting & Mechanical, Inc.  
Wood, T. B., Sons Co.

### BEARINGS—ball

Bearing Sales Co.  
Boston Gear Works  
Cooper Split Roller Bearing Corp.  
Dick, R. J., Co., Inc.  
Dodge Manufacturing Corp.  
Fafnir Bearing Co.  
Link-Belt Co.  
Marlin-Rockwell Corp.  
Minder, J. W., Chain & Gear Co.  
Minature Precision Bearings, Inc.  
Nice Ball Bearing Co.  
Pic Design Corp.  
Power Transmission Equipment Co.  
S K F Industries, Inc.  
Split Ball Bearing Corp.  
Stephens-Adamson Mfg. Co.  
Torrington Co.  
United Bearing Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.

### BEARINGS—roller

Bearing Sales Co.  
Chain Belt Co.  
Dodge Manufacturing Corp.  
Hyatt Bearings Div.  
Link-Belt Co.  
Marlin-Rockwell Corp.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
S K F Industries, Inc.  
Timken Roller Bearing Co.  
Torrington Co.  
United Bearing Co.  
Western Belting & Mechanical, Inc.

### BEARINGS—sleeve

Amplex Div.  
Asco Sintering Corp.  
Bearing Sales Co.  
Bunting Brass and Bronze Co.  
Dodge Manufacturing Corp.  
Kingwell Bros., Ltd.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morganite, Inc.  
Polymer Corp.  
Power Transmission Equipment Co.  
Randall Graphite Bearings, Inc.  
United Bearing Co.  
Western Belting & Mechanical, Inc.

### BELTING, DRIVE

#### chain or link

Associated Gear & Machine Co.  
Bearing Sales Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Dick, R. & J. Co., Inc.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Power Transmission Equipment Co.  
Rockford Chain Co., Inc.  
Western Belting & Mechanical, Inc.

### BELTING, DRIVE

#### composition

Bearing Sales Co.  
California Belting & Leather Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.

Dick, R. & J., Co., Inc.  
Extremelust, Inc.  
Globe Woven Belting Co., Inc.  
Minder, J. W., Chain & Gear Co.  
Pic Design Corp.  
Power Transmission Equip. Co.  
Raybestos-Manhattan, Inc.  
Russell Mfg. Co.  
Ton-Tex Corp.  
Victor Balata & Textile Belting Co.  
Western Belting Mechanical, Inc.

### BELTING, DRIVE—leather

Bearing Sales Co.  
California Belting & Leather Co.  
Chicago-Allis Mfg. Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Graton & Knight Co.  
E. F. Houghton & Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Rhoads, J. E., & Sons  
Ton-Tex Corp.  
Western Belting & Mechanical, Inc.

### BELTING, DRIVE—rubber

American Pulley Co.  
Bearing Sales Co.  
California Belting & Leather Co.  
Cook, H. N., Belting Co.  
Dayton Rubber Co.  
Degen, L. P., Belting Co.  
Durkee-Atwood Corp.  
Gates Rubber Co.  
Gerbing Mfg. Corp.  
Globe Woven Belting Co., Inc.  
Goodyear Tire & Rubber Co.  
Hewitt-Robins, Inc.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Raybestos-Manhattan, Inc.  
Russell Manufacturing Co.  
Thermold Co.  
Thor Power Tool Co.  
Ton-Tex Corp.  
U. S. Rubber Co.  
Western Belting & Mechanical, Inc.

### BELTS—timing

Associated Gear & Machine Co.  
Bearing Sales Co.  
Degen, L. P., Belting Co.  
Gates Rubber Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Power Transmission Equipment Co.  
United States Rubber Co.  
Wood's, T. B., Sons Co.

### BELTS, V—composition

Bearing Sales Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Raybestos-Manhattan, Inc.  
Ton-Tex Corp.  
Western Belting & Mechanical, Inc.

### BELTS, V—leather

Bearing Sales Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Graton & Knight Co.  
Power Transmission Equipment Co.  
Rhoads, J. E., & Sons  
Ton-Tex Corp.  
Western Belting & Mechanical, Inc.

### BELTS, V—rubber

Bearing Sales Co.  
Cook, H. N., Belting Co.  
Dayton Rubber Co.  
Degen, L. P., Belting Co.  
Dodge Manufacturing Corp.  
Durkee-Atwood Co.  
Gates Rubber Co.  
Gerbing Mfg. Corp.  
Goodyear Tire & Rubber Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Raybestos-Manhattan, Inc.  
Thermold Co.  
Ton-Tex Corp.  
United States Rubber Co.

Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.  
Worthington Corp.

### BOILERS & BOILER EQUIPMENT

Amer Iron Works, Inc.  
Boiler Eng. & Supply Co., Inc.  
Bros., Inc.  
Clayton Manufacturing Co.  
Cleveland Controls, Inc.  
Combustion Engineering, Inc.  
Copes-Vulcan Div.  
Enterprise Engine & Machinery Co.  
E. Keeler Co.  
McDonnell & Miller, Inc.  
(equipment only)  
National-U.S. Radiator Corp.  
Orr & Sembower, Inc.  
Parker Boiler Mfg. Co., Inc.  
Republic Steel Corp.  
Riley Stoker Corp.  
Western Boiler Co.  
Wheeler, Foster, Corp.  
Yarnall-Waring Co.

### CHAINS FOR DRIVES

Acme Chain Corp.  
Associated Gear & Machine Co.  
Atlas Chain & Mfg. Co.  
Bearing Sales Co.  
Boston Gear Works  
Chain Belt Co.  
Cullinan Wheel Co.  
Diamond Chain Co., Inc.  
Dick, R. & J., Co., Inc.  
Dodge Manufacturing Corp.  
Foot Bros. Gear & Machine Corp.  
Jeffrey Mfg. Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Power Transmission Equipment Co.  
Union Chain & Mfg. Co.  
United Bearing Co.  
Western Belting & Mechanical, Inc.

### CHAINS FOR DRIVES

Atlas Chain & Mfg. Co.  
Cullinan Wheel Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Rockford Chain Co., Inc.  
Union Chain & Mfg. Co.  
(conveying)

### CIRCUIT BREAKERS

Adam, Frank, Electric Co.  
Allis-Chalmers Mfg. Co.  
Appleton Electric Co.  
Bryant Electric Co., The  
BullDog Electric Products Div.  
Cutler-Hammer, Inc.  
Delta-Star Electric Div.  
Federal Pacific Electric Co.  
General Electric Co.,  
Circuit Protective Devices Dept.  
I-T-E Circuit Breaker Co.  
Mechanical Products, Inc.  
Square D Co.  
Texas Instruments, Inc.  
Wadsworth Electric Mfg. Co., Inc.

### CLUTCHES

Associated Gear & Machine Co.  
Bearing Sales Co.  
Brown, David, Inc.  
Chain Belt Co.  
Continental Sales & Service Co.  
Cutler-Hammer, Inc.  
Dodge Manufacturing Corp.  
Hilliard Corp.  
Hoover Electric Co.  
I-T-E Circuit Breaker Co.  
Jeffrey Mfg. Co.  
Lear, Inc.  
Leedeen Manufacturing Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Pic Design Corp.  
Power Transmission Equipment Co.  
Salsbury Corp.  
Twin Disc Clutch Co.  
V-Belt Clutch Co.  
Vickers, Inc.  
Warner Electric Brake & Clutch Co.

Western Belting & Mechanical, Inc.  
Zero-Max Corp.

### COLLARS—shaft

American Pulley Co.  
Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Chain Belt Co.  
Dick, R. & J., Co., Inc.  
Dodge Manufacturing Corp.  
Jeffrey Mfg. Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Pic Design Corp.  
Polymer Corp.  
Power Transmission Equipment Co.  
Randall Graphite Bearings, Inc.  
Standard Pressed Steel Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.

### COMPRESSORS

See AIR COMPRESSORS

### CONDUITS & FITTINGS

roller electric  
Aluminum Co. of America  
Anaconda Metal Hose Div.  
Appleton Electric Co.  
Buchanan Electrical Products Corp.  
Columbia Cable & Electric Corp.  
Crouse-Hinds Co. (fittings only)  
Erico Prod., Inc.  
Gedney Electric Co.  
General Cable Corp.  
General Electric Co., Chemical & Metallurgical Div.  
Hoffman Engineering Corp.  
Johns-Manville  
National Electric Div.  
Orangeburg Mfg. Co.  
Republic Steel Corp.  
Rome Cable Corp.  
Universal Metal Hose Co.

### CONTROL CENTERS

Allen-Bradley Co.  
Allis-Chalmers Mfg. Co.  
Bailey Meter Co.  
Barber-Colman Co.  
Bogue Electric Mfg. Co.  
Bristol Co.  
B/W Controller Corp.  
Cannon Electric Co.  
Clark Controller Co.  
Cleveland Controls, Inc.  
Continental Electric Equipment Co.  
Control Panel Corp.  
Cutler-Hammer, Inc.  
Federal Pacific Electric Co.  
Hagan Chemicals & Controls, Inc.  
Leeds & Northrup Co.  
Powers Regulator Co.  
Rucker Co.  
Rundel Electric Co.  
Square D Co.

### CONTROLS

compressed air  
Accessory Products Co.  
Airmatic Valve, Inc.  
Automatic Switch Co.  
Bailey Meter Co.  
Barksdale Valves  
Bellows Co.  
Bristol Co.  
Cleveland Pneumatic Industries  
Fischer & Porter Co.  
Gardner-Denver  
General Controls Co.  
Hagan Chemicals & Controls, Inc.  
Hanna Engineering Works  
Hannifin Co.  
Lear, Inc.  
Leedeen Manufacturing Co.  
Leeds & Northrup Co.  
Mason-Nelan  
Mechanical Air Controls, Inc.  
Modernair Corp.  
Norgren, C. A., Co.  
OPW-Jordan  
Powers Regulator Co.  
Rivett Lath & Grinder, Inc.  
Rucker Co.  
Vickers, Inc.  
Wheeler, Foster, Corp.

### CONTROLS—electric

Airmatic Valve, Inc.  
Allen-Bradley Co.  
Allis-Chalmers Mfg. Co.  
Automatic Switch Co.  
Barber-Colman Co.  
Beckman Systems Div.  
Bogue Electric Mfg. Co.  
Bristol Co.  
B/W Controller Corp.  
Cannon Electric Co.  
Clark Controller Co.  
Cleveland Controls, Inc.  
Cleveland Pneumatic Industries  
Control Panel Corp.  
Crouse-Hinds Co.  
Cutler-Hammer, Inc.  
Daystrom-Western Sales Div.  
Federal Pacific Electric Co.  
Fischer & Porter Co.  
General Controls Co.  
Hagan Chemicals & Controls, Inc.  
Lear, Inc.  
Leeds & Northrup Co.  
Licon Div.  
Manning, Maxwell & Moore, Inc.  
McDonnell & Miller, Inc.  
Mercoind Corp.  
Minder, J. W., Chain & Gear Co.  
Pesco Products Div.  
Republic Electric & Development Co.  
Rundel Electric Co.  
Wadsworth Electric Mfg. Co., Inc.  
Weltronic Co.  
Wheeler, Foster Corp.

### CONTROLS—electric motor

Airmatic Valve, Inc.  
Allen-Bradley Co.  
Allis-Chalmers Mfg. Co.  
Bogue Electric Mfg. Co.  
Bristol Co.  
B/W Controller Co.  
Cannon Electric Co.  
Clark Controller Co.  
Crouse-Hinds Co.  
Cutler-Hammer, Inc.  
Federal Pacific Electric Co.  
Fischer & Porter Co.  
Furnas Electric Co.  
General Controls Co.  
Lear, Inc.  
Minder, J. W., Chain & Gear Co.  
Reliance Electric & Engineering Co.  
Rundel Electric Co.  
Sarco Co., Inc.  
Ward Leonard Electric Co.  
Weltronic Co.  
Wheeler, Foster Corp.

### CONTROLS—hydraulic

Adel Precision Products  
Airmatic Valve, Inc.  
Allis-Chalmers Mfg. Co.  
Automatic Switch Co.  
Barksdale Valves  
Blackhawk Mfg. Co.  
Bristol Co.  
Carter Controls, Inc.  
Cleveland Pneumatic Industries  
Commercial Shearing & Stamping Co.  
Control Panel Corp.  
Denison Engineering Div.  
Dukes Co., Inc.  
General Controls Co.  
Hanna Engineering Works  
Hydraulic Press Mfg. Co.  
Lassman, Benjamin, & Son  
Lear, Inc.  
Leedeen Manufacturing Co.  
McDonnell & Miller, Inc.  
Modernair Corp.  
Oilgear Co.  
Rivett Lath & Grinder, Inc.  
Rucker Co.  
Sperry Products, Inc.  
Waterman Eng. Co.  
Wheeler, Foster Corp.

### COUPLINGS—shaft

American Stock Gear Div.  
Associated Gear & Machine Co.  
Atlas Chain & Mfg. Co.  
Bearing Sales Co.  
Bond, Charles, Co.  
Boston Gear Works  
Certified Flexible Couplings, Inc.  
Chain Belt Co.  
Cullinan Wheel Co.  
Diamond Chain Co., Inc.  
Dick Co., R. & J., Inc.  
Dodge Manufacturing Corp.  
Falk Corp.

Gerbing Manufacturing Corp.  
Hewitt-Robins, Inc.  
Jeffrey Mfg. Co.  
Link-Belt Co.  
Lord Manufacturing Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Pic Design Corp.  
Power Transmission Equipment Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.

#### CYLINDERS—air

Airmatic Valve, Inc.  
Aikon Products Corp.  
Bailey Meter Co.  
Bellows Co.  
Carter Controls, Inc.  
Cascade Mfg. Co.  
Cleveland Pneumatic Industries  
Curtis Manufacturing Co.  
Dukes Co., Inc.  
Electro-Mechano Co.  
Galland-Henning Mfg. Co.  
Hanna Engineering Works  
Hannifin Co.  
Hydraulic Press Mfg. Co.  
Hydro-Line Mfg. Co.  
Logansport Machine Co., Inc.  
Modernair Corp.  
Remco Mfg. Co.  
Rivett Lathe & Grinder, Inc.  
Rucker Co.  
Schrader's, A., Son Div.  
S-P Manufacturing Corp.  
Turlock Iron & Machine Works  
Unit Mfg. Co.

#### CYLINDERS—hydraulic

Airmatic Valve, Inc.  
Aikon Products Corp.  
Be-Ge Mfg. Corp.  
Bellows Co.  
Blackhawk Mfg. Co.  
Carter Controls, Inc.  
Cascade Manufacturing Co.  
Commercial Shearing & Stamping Co.  
Curtis Mfg. Co.  
Denison Engineering Div.  
Dukes Co., Inc.  
Electro-Mechano Co.  
Galland-Henning Mfg. Co.  
Hanna Engineering Works  
Hannifin Co.  
Hydraulic Press Mfg. Co.  
Hydro-Line Mfg. Co.  
Lassman, Benjamin, & Son  
Logansport Machine Co., Inc.  
Modernair Corp.  
Oilgear Co.  
Remco Manufacturing Co.  
Rivett Lathe & Grinder Inc.  
Rucker Co.  
S-P Manufacturing Corp.  
Schrader's, A., Son Div.  
Turlock Iron & Machine Works  
Unit Mfg. Co.  
Vickers, Inc.

#### DUCTS—bus and wiring

Adam, Frank, Electric Co.  
Anaconda Metal Hose Div.  
Bulldog Electric Products Div.  
Continental Electric Equipment Co.  
Delta-Star Electric Div.  
Federal Pacific Electric Co.  
Hoffman Engineering Corp.  
I-T-E Circuit Breaker Co.  
National Electric Div.  
Panduit Corp.  
Square D Co.

#### ENGINES

Allis-Chalmers Mfg. Co.  
Chicago Pneumatic Tool Co.  
Continental Sales & Service Co.  
Detroit Diesel Engine Div.  
Enterprise Engine & Machinery Co.  
Fairbanks, Morse & Co. (gas, diesel)  
Hercules Motors Corp.  
Kohler Co.  
Onan, D. W., & Sons, Inc.  
Worthington Corp.

#### FITTINGS & COUPLINGS

Accessory Products Co.  
Aeroquip Corp.  
Airattera  
Chicago Pneumatic Tool Co.  
Chiksan Co.  
Flexonics Corp.

Fort Wayne Div.  
Foster, L. B., Co.  
Hansen Mfg. Co.  
Hose Accessories Co.  
Imperial Brass Mfg. Co.  
Ladish Co.  
Lincoln Eng. Co. of Calif.  
Modernair Corp.  
Parker Fittings & Hose Div.  
Royley, Inc.  
Schrader's, A., Son  
Smith, Grover, Mfg. Corp.  
Thermoid Div.  
Titeflex, Inc., Thermoid Div.  
W-S Fittings Works  
Western Belting & Mechanical, Inc.

#### FITTINGS & COUPLINGS— hydraulic

Aeroquip Corp.  
Airattera  
Blackhawk Mfg. Co.  
Chiksan Co.  
Eastman Mfg. Co.  
Flexonics Corp.  
Fort Wayne Div.  
Foster, L. B., Co.  
Hansen Mfg. Co.  
Hose Accessories Co.  
Imperial Brass Mfg. Co.  
Ladish Co.  
Parker Fittings & Hose Div.  
Royley, Inc.  
Schrader's, A., Son Div.  
Smith, Grover, Mfg. Corp.  
Thermoid Div.  
Titeflex, Inc.  
Western Belting & Mechanical, Inc.

#### FLUID DRIVES

Denison Eng. Div.  
Dodge Manufacturing Corp.  
Electra Motors, Inc.  
Minder, J. W., Chain & Gear Co.  
Oilgear Co.  
Reliance Electric & Engineering Co.  
Western Belting & Mechanical, Inc.

#### FUSES

Bussmann Manufacturing Div.  
Chance, A. B., Co.  
Federal Pacific Electric Co.  
Monarch Electric Corp.  
S & C Electric Co.

#### GEARMOTORS

Allis-Chalmers Mfg. Co.  
American Stock Gear Div.  
Bearing Sales Co.  
Boston Gear Works  
Bogus Electric Mfg. Co.  
Brown, David, Inc.  
Christian, J. D., Engineers  
Delco Products Div.  
Doerr Electric Corp.  
Electra Motors, Inc.  
Fairbanks, Morse Co.  
Falk Corp.  
Foote Bros. Gear & Machine Corp.  
Hoover Electric Co.  
Imperial Electric Co.  
Janette Electric Mfg. Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Philadelphia Gear Corp.  
Power Transmission Equipment Co.  
Reliance Electric & Engineering Co.  
Smith, A. O., Corp.  
Sterling Electric Motors, Inc.  
U. S. Electrical Motors, Inc.  
Western Belting & Mechanical, Inc.  
Western Gear Corp.

#### GEARS—bevel, helical, spur, etc.

Allis, Louis, Co. (helical only)  
American Stock Gear Div.  
Associated Gear & Machine Co.  
Bearing Sales Co.  
Bond, Charles, Co.  
Boston Gear Works  
Brown, David, Inc.  
Christian, J. D., Engineers  
Falk Corp.  
Foote Bros. Gear & Machine Corp.  
Gear Engineering & Mfg. Co., Inc.

Hewitt-Robins, Inc.  
Hoover Electric Co.  
Jeffrey Mfg. Co.  
Johnson Gear & Mfg. Co., Ltd.  
Link-Belt Co.  
Lufkin Foundry & Machine Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Ohio Gear Co.  
Philadelphia Gear Corp.  
Pic Design Corp.  
Polymer Corp.  
Power Transmission Equipment Co.  
Sewall, E. B., Mfg. Co.  
Stephens-Adamson Mfg. Co.  
Western Gear Corp.

#### GEARS—worm

Allis, Louis, Co.  
American Stock Gear Div.  
Associated Gear & Machine Co.  
Boston Gear Works  
Brown, David, Inc.  
Cleveland Worm & Gear Co.  
Foote Bros. Gear & Machine Corp.  
Gear Engineering & Mfg. Co., Inc.  
Hewitt-Robins, Inc.  
Hoover Electric Co.  
Johnson Gear & Mfg. Co., Ltd.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Ohio Gear Co.  
Philadelphia Gear Corp.  
Pic Design Corp.  
Power Transmission Equipment Co.  
Sewall, E. B., Mfg. Co.  
Stephens-Adamson Mfg. Co.  
Western Gear Corp.

#### GENERATORS—electric

Allis-Chalmers Mfg. Co.  
Allis, Louis, Co.  
Continental Electric Co.  
Delco Products Div.  
Detroit Diesel Engine Div.  
Electric Machinery Mfg. Co.  
Fairbanks, Morse & Co.  
(gasoline, diesel)  
Hertner Electric Co.  
Hoover Electric Co.  
Imperial Electric Co.  
Kohler Co.  
Leland Electric Co. Div.  
Motor Generator Corp.  
Onan, D. W., & Sons, Inc.  
Pesco Products Div.  
Reliance Electric & Engineering Co.  
Thor Power Tool Co.  
Worthington Corp.

#### HOSE—air

Aeroquip Corp.  
Airattera  
Anaconda Metal Hose Div.  
Atlas Copco Pacific, Inc.  
Binks Manufacturing Co.  
Chicago Pneumatic Tool Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
DeVilbiss Co.  
Flexonics Corp.  
Fort Wayne Div.  
Gates Rubber Co.  
Hewitt-Robins, Inc.  
Imperial Brass Mfg. Co.  
Johnson Metal Hose, Inc.  
Lincoln Eng. Co. of Calif.  
M&E Mfg. Co.  
Modernair Corp.  
Parker Fittings & Hose Div.  
Polymer Corp.  
Power Transmission Equipment Co.

Raybestos-Manhattan, Inc.  
Resistoflex Corp.  
Royley, Inc.  
Smith, Grover, Mfg. Corp.  
Thermoid Div.  
Titeflex, Inc.  
United States Rubber Co.  
Western Belting & Mechanical, Inc.

#### HOSE—flexible metallic

Aeroquip Corp.  
Aluminum Co. of America  
Anaconda Metal Hose Div.  
Columbia Cable & Electric Corp.  
Fairbanks, Morse & Co.  
General Controls Co.

Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Flexonics Corp.  
Johnson Metal Hose, Inc.  
Lincoln Eng. Co. of Calif.  
Power Transmission Equipment Co.  
Raybestos-Manhattan, Inc.  
Resistoflex Corp.  
Smith, Grover, Mfg. Corp.  
Titeflex, Inc.  
Universal Metal Hose Co.  
Western Belting & Mechanical, Inc.

#### HOSE—hydraulic

Aeroquip Corp.  
Airattera  
Anaconda Metal Hose Div.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Eastman Mfg. Co.  
Flexonics Corp.  
Fort Wayne Div.  
Hewitt-Robins, Inc.  
Johnson Metal Hose, Inc.  
Lincoln Eng. Co. of Calif.  
Parker Fittings & Hose Div.  
Polymer Corp.  
Power Transmission Equipment Co.  
Raybestos-Manhattan, Inc.  
Resistoflex Corp.  
Royley, Inc.  
Smith, Grover, Mfg. Corp.  
Thermoid Div.  
Titeflex, Inc.  
Western Belting & Mechanical, Inc.

#### INCREASERS—speed

Associated Gear & Machine Co.  
Brown, David, Inc.  
Christian, J. D., Engineers  
Cleveland Worm & Gear Co.  
Falk Corp.  
Hewitt-Robins, Inc.  
Link-Belt Co.  
Lufkin Foundry & Machine Co.  
Minder, J. W., Chain & Gear Co.  
Ohio Gear Co.  
Philadelphia Gear Corp.  
Western Gear Corp.  
Worthington Corp.

#### LACING—belt

Clipper Belt Lacer Co.  
Cook, H. N., Belting Co.  
Dick, R. & S., Co., Inc.  
Graton & Knight Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Stephens-Adamson Mfg. Co.  
Ton-Tex Corp.  
Western Belting & Mechanical, Inc.

#### LOAD CENTERS

Adam, Frank, Electric Co.  
Allis-Chalmers Mfg. Co.  
Bogue Electric Mfg. Co.  
BullDog Electric Prod. Div.  
Cascade Mfg. Co.  
Continental Electric Equipment Co.  
Cutler-Hammer, Inc.  
Federal Pacific Electric Co.  
Square D Co.  
Wadsworth Elec. Mfg. Co., Inc.

#### MOTORS—air

Bellows Co.  
Chicago Pneumatic Tool Co.  
Cleveland Pneumatic Industries  
Gardner-Denver Co.  
Gast Mfg. Corp.  
General Controls Co.  
Hannifin Co. (linear)  
Ingersoll-Rand Co.  
Joy Manufacturing Co.  
Lear, Inc.  
Powers Regulator Co.  
Smith, Grover, Mfg. Corp.  
Thor Power Tool Co.

#### MOTORS—electric, DC

Allis-Chalmers Mfg. Co.  
Allis, Louis, Co.  
Bearing Sales Co.  
Bodine Electric Co.  
Bogue Electric Mfg. Co.  
Cannon Electric Co.  
Chicago Pneumatic Tool Co.  
Continental Electrical Co., Inc.  
Doerr Electric Corp.

Hoover Electric Co.  
Howard Industries, Inc.  
Imperial Electric Co.  
Land-Air, Inc.  
Lear, Inc.  
Leland Electric Co. Div.  
Peerless Electric Co.  
Pesco Products Div.  
Reliance Electric & Engineering Co.  
Robbins & Myers, Inc.  
Smith, A. O., Corp.  
Zidell Machinery & Supply Co.

## MOTORS—electric, poly-phase, AC

Allis-Chalmers Mfg. Co.  
Allis, Louis, Co.  
Bearing Sales Co.  
Bodine Electric Co.  
Cannon Electric Co.  
Continental Electric Co., Inc.  
Delco Products Div.  
Diehl Manufacturing Co.  
Doerr Electric Corp.  
Electra Motors, Inc.  
Electric Machinery Mfg. Co.  
Fairbanks, Morse & Co.  
Franklin Electric Co., Inc.  
Hoover Electric Co.  
Howard Industries, Inc.  
Howell Electric Motors Co.  
Imperial Electric Co.  
Lear, Inc.  
Leland Electric Co. Div.  
Minder, J. W., Chain & Gear Co.  
Peerless Electric Co.  
Pesco Products Div.  
Power Transmission Equipment Co.  
Reliance Electric & Engineering Co.  
Robbins & Myers, Inc.  
Smith, A. O., Corp.  
Sterling Electric Motors, Inc.  
U. S. Electrical Motors, Inc.  
Zidell Machinery & Supply Co.

## MOTORS—electric, single-phase, AC

Bearing Sales Co.  
Bodine Electric Co.  
Bogue Electric Mfg. Co.  
Cannon Electric Co.  
Delco Products Div.  
Diehl Manufacturing Co.  
Doerr Electric Corp.  
Electra Motors, Inc.  
Electric Machinery Mfg. Co.  
Fairbanks, Morse Co.  
Franklin Electric Co., Inc.  
Hoover Electric Co.  
Howard Industries, Inc.  
Howell Electric Motor Co.  
Imperial Electric Co.  
Lear, Inc.  
Leland Electric Co. Div.  
Minder, J. W., Chain & Gear Co.  
Peerless Electric Co.  
Pesco Products Div.  
Power Transmission Equipment Co.  
Reliance Electric & Eng. Co.  
Robbins & Myers, Inc.  
Smith, A. O., Corp.  
Sterling Electric Motors, Inc.

## PILLOW BLOCKS

Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Chain Belt Co.  
Cooper Split Roller Bearing Corp.  
Dick, R. & J., Co., Inc.  
Dodge Manufacturing Corp.  
Hewitt-Robins, Inc.  
Jeffrey Mfg. Co.  
Link-Belt Co.  
Marlin-Rockwell Corp.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Randall Graphite Bearings, Inc.  
S K F Industries, Inc.  
Shafer Bearing Div.  
Split Ballbearing Corp.  
Stephens-Adamson Mfg. Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.

## PULLEYS

American Pulley Co.  
Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Christian, J. D., Engineers  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.

Dick, R. & J., Co., Inc.  
Dings Magnetic Separator Co.  
Dodge Manufacturing Corp.  
Durkee-Atwood Co.  
Gates Rubber Co.  
Gerbing Manufacturing Corp.  
Hewitt-Robins, Inc.  
Jeffrey Mfg. Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Power Transmission Equipment Co.  
Reliance Electric & Eng. Co.  
Stephens-Adamson Mfg. Co.  
Sterns Magnetic Products  
U.S. Rubber Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.

## PUMPS—hydraulic power

American Manganese Steel Div.  
Atlas Copco Pacific, Inc.  
Be-Ge Mfg. Corp.  
Commercial Shearing & Stamping Co.  
Denison Engineering Div.  
Fairbanks, Morse & Co.  
Hydraulic Press Mfg. Co.  
Hydrex Div.  
Ingersoll-Rand Co.  
Pesco Products Div.  
Rivett Lathe & Grinder Inc.  
Rockwell Mfg. Co.  
Rope Hydraulics, Inc.  
Rucker Co.  
Smith, Grover, Mfg. Corp.  
Tuthill Pump Co.  
Unit Mfg. Co.  
Vickers, Inc.  
Viking Pump Co.  
Worthington Corp.  
Yeomans Bros. Co.

## REDUCERS, SPEED—

### bevel gear

Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Brown, David, Inc.  
Falk Corp.  
Foote Bros. Gear & Machine Corp.  
Hewitt-Robins, Inc.  
Hoover Electric Co.  
Hub City Iron Co.  
Lufkin Foundry & Machine Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Ohio Gear Co.  
Pic Design Corp.  
Power Transmission Equipment Co.  
Western Gear Corp.  
Zero-Max Corp.

## REDUCERS, SPEED—

### helical gear

Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Brown, David, Inc.  
Christian, J. D., Engineers  
Dodge Mfg. Corp.  
Doris, Geo. P., Co., Inc.  
Electra Motors, Inc.  
Falk Corp.  
Foote Bros. Gear & Machine Corp.  
Hewitt-Robins, Inc.  
Hoover Electric Co.  
Hub City Iron Co.  
Link-Belt Co.  
Lufkin Foundry & Machine Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Ohio Gear Co.  
Pic Design Corp.  
Power Transmission Equipment Co.  
Reliance Electric & Engineering Co.  
Stephens-Adamson Mfg. Co.  
Sterling Electric Motors, Inc.  
Western Gear Corp.

## REDUCERS, SPEED—

### planetary gear

Associated Gear & Machine Co.  
Bearing Sales Co.  
Brown, David, Inc.  
Hart Reduction Pulley Co.  
Hoover Electric Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Power Transmission Equipment Co.  
Vernon Tool Co., Ltd.  
Western Gear Corp.

## REGULATORS—pressure

Accessory Products Co.  
Allis-Chalmers Mfg. Co.  
Airmatic Valve, Inc.  
Bellows Co.  
Bristol Co.  
Binks Manufacturing Co.  
Copes-Vulcan Div.  
Crane Co.  
Cutler-Hammer, Inc.  
Daystrom-Weston Sales Div.  
DeVilbiss Co.  
Fisher Governor Co.  
General Controls Co.  
Hagan Chemical & Controls, Inc.  
Hannifin Co. (air line)  
Hoffman Specialty Mfg. Corp.  
Leedeen Manufacturing Co.  
M-B Products, Inc.  
Manning, Maxwell & Moore, Inc.  
Mason-Neilan  
Modernair Corp.  
Norgren, C. A., Co.  
OPW-Jordan  
Powers Regulator Co.  
Rockwell Mfg. Co.  
Sarco, Co., Inc.  
Schrader's, A., Son Div.  
Square D Co.  
Wheeler, Foster, Corp.

## SHEAVES

American Pulley Co.  
Amplex Div.  
Associated Gear & Machine Co.  
Bearing Sales Co.  
Cook, H. N., Belting Co.  
Degen, L. P., Belting Co.  
Dick, R. & J., Co., Inc.  
Dodge Manufacturing Corp.  
Durkee-Atwood Co.  
Foote Bros. Gear & Machine Corp.  
Gates Rubber Co.  
Gerbing Manufacturing Corp.  
Jeffrey Mfg. Co.  
Minder, J. W., Chain & Gear Co.  
Nice Ball Bearing Co.  
Power Transmission Equipment Co.  
Stephens-Adamson Mfg. Co.  
Western Belting & Mechanical, Inc.  
Wood's, T. B., Sons Co.  
Worthington Corp.

## SPROCKETS

Acme Chain Corp.  
American Stock Gear Div.  
Amplex Div.  
Associated Gear & Machine Co.  
Atkins Chain & Mfg. Co.  
Babbitt Steam Specialty Co.  
Bearing Sales Co.  
Boston Gear Works  
Chain Belt Co.  
Cook, H. N., Belting Co.  
Cullman Wheel Co.  
Diamond Chain Co., Inc.  
Dick, R. & J., Co., Inc.  
Dodge Manufacturing Corp.  
Foote Bros. Gear & Machine Corp.  
Jeffrey Mfg. Co.  
Johnson Gear & Mfg. Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Power Transmission Equipment Co.  
Rockford Chain Co., Inc.  
Sewall, E. B., Mfg. Co.  
Stephens-Adamson Mfg. Co.  
Union Chain & Mfg. Co.  
United Bearing Co.  
Western Belting & Mechanical, Inc.

## SWITCHES—automatic

Allen-Bradley Co.  
Automatic Switch Co.  
Chance, A. B., Co.  
Clark Controller Co.  
Cutler-Hammer, Inc.  
Delta-Star Electric Div.  
Electro Products Labs, Inc.  
Federal Pacific Electric Co.  
General Controls Co.  
Mercole Corp.  
Micro-Switch Div.  
Square D Co.

## TRANSFORMERS

Allis-Chalmers Mfg. Co.  
Bogue Electric Mfg. Co.  
Deltas-Star Electric Div.  
Federal Pacific Electric Co.  
General Controls Co.

Hevi-Duty Electric Co.  
I-T-E Circuit Breaker Co.  
Kuhlmam Electric Co.  
Land-Air, Inc.  
Moloney Electric Co.

## TRANSMISSION, VARIABLE

SPEED

Allis-Chalmers Mfg. Co.  
Allis, Louis, Co.  
American Pulley Co.  
Associated Gear & Machine Co.  
Bearing Sales Co.  
Boston Gear Works  
Brown, David, Inc.  
Christian, J. D., Engineers  
Cleveland Worm & Gear Co.  
Cutler-Hammer, Inc.  
Denison Eng. Div.  
Dick, R. & J., Co., Inc.  
Gerbing Manufacturing Corp.  
Graham Transmissions, Inc.  
Imperial Electric Co.  
Link-Belt Co.  
Minder, J. W., Chain & Gear Co.  
Morse Chain Co.  
Oliger Co.  
Power Transmission Equipment Co.  
Reeves Pulley Co. Div.  
Reliance Electric & Engineering Co.  
Stephens-Adamson Mfg. Co.  
Stratos Div.  
Vickers, Inc.  
Western Gear Corp.  
Worthington Corp.  
Zero-Max Co.

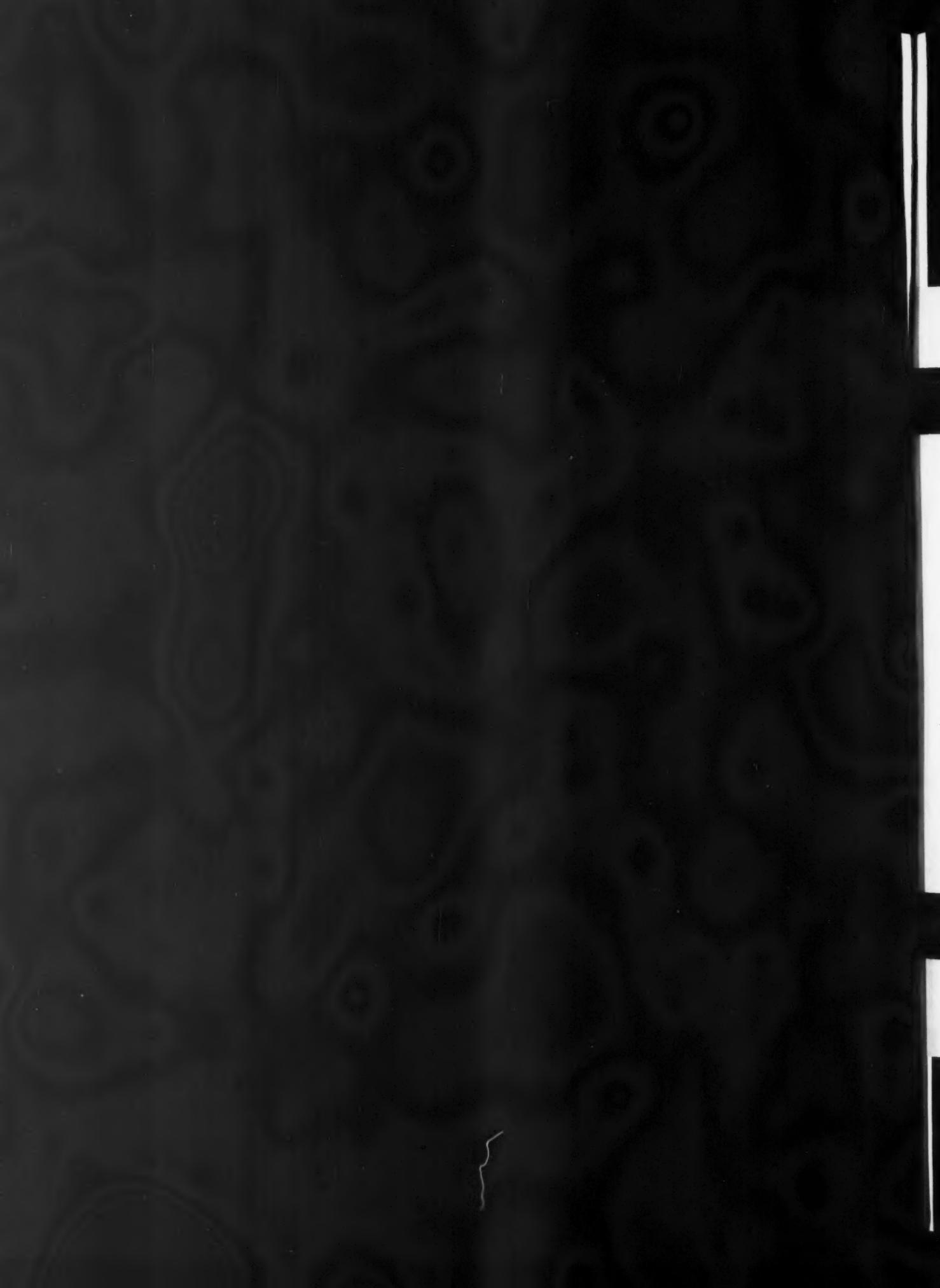
## VALVES—air power line

Airmatic Valve, Inc.  
Alkon Products Corp.  
Allis-Chalmers Mfg. Co.  
Atkomatic Valve Co., Inc.  
Barksdale Valves  
Carter Controls, Inc.  
Circle Seal Products Co., Inc.  
Cleveland Pneumatic Industries  
Foster, L. B., Co.  
Galland-Henning Mfg. Co.  
General Controls Co.  
Hanna Engineering Works  
Hannifin Co.  
Hose Accessories Co.  
Imperial Brass Mfg. Co.  
Ladish Co.  
Leedeen Manufacturing Co.  
Logansport Machine Co., Inc.  
Lunkenheimer Co.  
Manning, Maxwell & Moore, Inc.  
Mason-Neilan  
Modernair Corp.  
Norgren, C. A., Co.  
Numatics, Inc.  
Rivett Lathe & Grinder, Inc.  
Rucker Co.  
Schrader's, A., Son Div.  
Skinner Electric Valve Div.  
S-P Manufacturing Corp.  
Versa Products Co., Inc.  
Walworth Co.

## VALVES—hydraulic power line

Airmatic Valve, Inc.  
Alkon Products Corp.  
Allis-Chalmers Mfg. Co.  
Atkomatic Valve Co., Inc.  
Barksdale Valves  
Be-Ge Mfg. Corp.  
Blackhawk Mfg. Co.  
Circle Seal Products Co., Inc.  
Cleveland Pneumatic Industries  
Commercial Shearing & Stamping Co.  
Crane Co.  
Denison Engineering Div.  
Foster, L. B., Co.  
Galland-Henning Mfg. Co.  
Hanna Engineering Works  
Hydraulic Press Mfg. Co.  
Hydrex Div.  
Imperial Brass Mfg. Co.  
Ladish Co.  
Lassman, Benjamin, & Son  
Leedeen Manufacturing Co.  
Logansport Machine Co., Inc.  
Lunkenheimer Co.  
Modernair Corp.  
Oilgear Co.  
Parker Hydraulics Div.  
Rivett Lathe & Grinder, Inc.  
Rucker Co.  
Skinner Electric Valve Div.  
S-P Manufacturing Corp.  
Tuthill Pump Co.  
Unit Mfg. Co.  
Vesta Products Co., Inc.  
Vickers, Inc.  
Walworth Co.  
Waterman Eng. Co.





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8	35	62	89	116	143	170	197	224	251	278	305	332
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10	37	64	91	118	145	172	199	226	253	280	307	334
11	38	65	92	119	146	173	200	227	254	281	308	335
12	39	66	93	120	147	174	201	228	255	282	309	336
13	40	67	94	121	148	175	202	229	256	283	310	337
14	41	68	95	122	149	176	203	230	257	284	311	338
15	42	69	96	123	150	177	204	231	258	285	312	339
16	43	70	97	124	151	178	205	232	259	286	313	340
17	44	71	98	125	152	179	206	233	260	287	314	341
18	45	72	99	126	153	180	207	234	261	288	315	342
19	46	73	100	127	154	181	208	235	262	289	316	343
20	47	74	101	128	155	182	209	236	263	290	317	344
21	48	75	102	129	156	183	210	237	264	291	318	345
22	49	76	103	130	157	184	211	238	265	292	319	346
23	50	77	104	131	158	185	212	239	266	293	320	347
24	51	78	105	132	159	186	213	240	267	294	321	348
25	52	79	106	133	160	187	214	241	268	295	322	349
26	53	80	107	134	161	188	215	242	269	296	323	350
27	54	81	108	135	162	189	216	243	270	297	324	351

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4	31	58	85	112	139	166	193	220	247	274	301	328
5	32	59	86	113	140	167	194	221	248	275	302	329
6	33	60	87	114	141	168	195	222	249	276	303	330
7	34	61	88	115	142	169	196	223	250	277	304	331
8	35	62	89	116	143	170	197	224	251	278	305	332
9	36	63	90	117	144	171	198	225	252	279	306	333
10	37	64	91	118	145	172	199	226	253	280	307	334
11	38	65	92	119	146	173	200	227	254	281	308	335
12	39	66	93	120	147	174	201	228	255	282	309	336
13	40	67	94	121	148	175	202	229	256	283	310	337
14	41	68	95	122	149	176	203	230	257	284	311	338
15	42	69	96	123	150	177	204	231	258	285	312	339
16	43	70	97	124	151	178	205	232	259	286	313	340
17	44	71	98	125	152	179	206	233	260	287	314	341
18	45	72	99	126	153	180	207	234	261	288	315	342
19	46	73	100	127	154	181	208	235	262	289	316	343
20	47	74	101	128	155	182	209	236	263	290	317	344
21	48	75	102	129	156	183	210	237	264	291	318	345
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23	50	77	104	131	158	185	212	239	266	293	320	347
24	51	78	105	132	159	186	213	240	267	294	321	348
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26	53	80	107	134	161	188	215	242	269	296	323	350
27	54	81	108	135	162	189	216	243	270	297	324	351

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# How to beat the high cost of temperature control

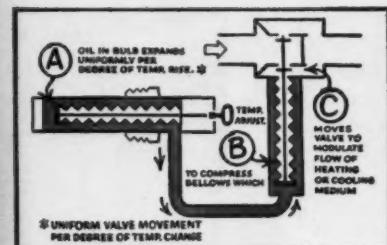
## The practical approach to temperature control

By John W. Ritter, Test Engineer,  
SARCO Company, Inc.

Precise temperature regulation is essential in many processing operations, not only for quality control, but for maintenance of output as well.

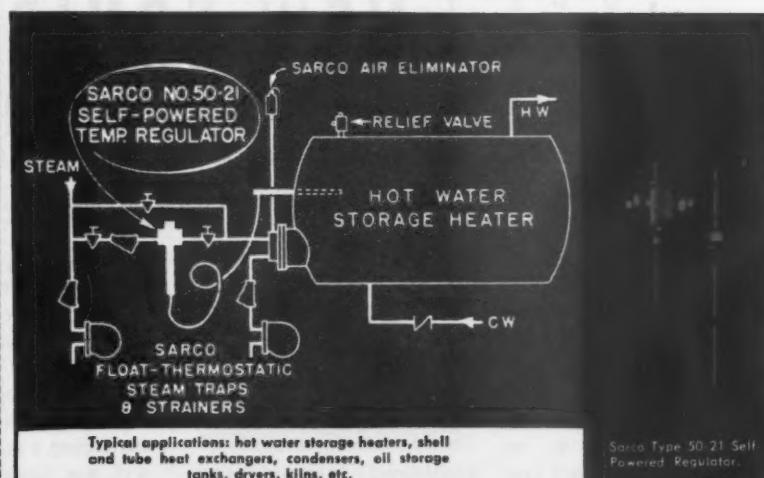
Manual temperature control is unsatisfactory because of the possibility of spoilage and loss of quality control which can result from irregular or indifferent hand regulation.

Automatic controls are available in a wide variety, including pneumatic, electronic, and self-powered. Pneumatic and electronic controls are relatively expensive to purchase and install, and may require frequent maintenance. However, in most applications, control requirements can be achieved very successfully by the use of relatively simple, economical Sarco Self-powered Regulators.



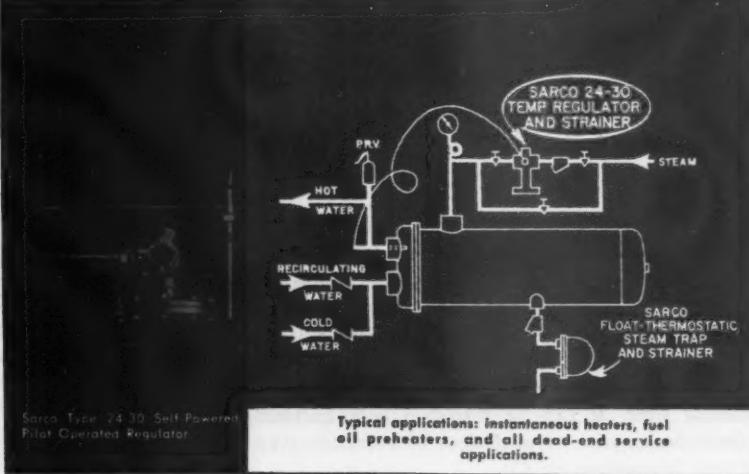
This drawing shows simplicity of operation of the Sarco 50-21 Temperature Regulator, which consists of a thermostat, capillary tubing, and a valve.

Sarco controls, like the 50-21 and the 24-30, have the required degree of sensitivity and dependability, combined with the ruggedness inherent in the sealed capillary tube construction. Because these Sarco controls do not depend on external power, such as electricity or compressed air, they have established long records of sustained, reliable operation. They are an economical and practical solution to the problem of maintaining continuous watchdog duty over processing temperatures.



Typical applications: hot water storage heaters, shell and tube heat exchangers, condensers, oil storage tanks, dryers, kilns, etc.

Sarco Type 50-21 Self-Powered Regulator.



Typical applications: instantaneous heaters, fuel oil preheaters, and all dead-end service applications.

## Self-powered automatic temperature regulators by SARCO . . .

have these 5 marked advantages: No compressed air or electrical wiring required. No delicate mechanisms to adjust or maintain. No packing glands to stick or require maintenance. No shutdown during power failure. No specialized maintenance required.

Sarco Self-Powered Controls are self-contained and can be installed by any pipe fitter. They are so reasonable in cost that you can afford Sarco automatic heating controls for every application in your plant. Write for 10-page Sarco Control Bulletin No. 620.

6346-B

**SARCO**  
COMPANY, INC.

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See listing in Directory Section



# NEW EQUIPMENT

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USE RIP OUT POSTCARD, PAGE 99, FOR MORE INFORMATION ON PRODUCTS DESCRIBED

#### FINE PITCH BUSHING CHAIN ...comes in stainless or standard steel

High strength and resistance to joint wear are combined with minimum size and weight in this Micro-pitch standard bushing chain. It permits an infinite variety of shaft centers, and multiple shafts can be accurately timed because sprockets may engage both sides of the chain. Designed for electro-mechanical



equipment, instruments, tape recorders and similar uses, the chain has a .1475 pitch and weighs about  $\frac{1}{2}$  oz. per ft. *Diamond Chain Co.*

... FOR MORE DETAILS, CIRCLE NO. 225

#### HEAVY DUTY VIBRATING FEEDER ...for the heaviest kind of feeding

This No. 6-D Feeder, designed for the heaviest kind of duty, has a capacity of up to 1,000 tons per hour, and is ideal for feeding controlled tonnages from bins, hoppers to belt, crushers, kilns, scales and other processing equipment. It has 60x90 in. open pan deck and renewable wear-resistant liner. It can be furnished with enclosed pan, tubular decks, grizzly type deck or with spreader type deck. *Jeffrey Manufacturing Co.*

... FOR MORE DETAILS, CIRCLE NO. 226

#### PORTRABLE 5-TON HYDRAULIC VISE ...foot-controlled, with removable power unit

An all-purpose machine tool, this vise with de-mountable power unit can be quickly converted with attachments to a pipe bender, bar stock or sheet metal shear, die punch or mold press, hydraulic jack or press and other uses. Attachments fasten to the primary jaw with a chamfered lock pin that's automatically pulled tight by a chamfered Allen screw. Foot-operated, with power, control, and release pedals to leave operator's hands free, it can



be brought to the full 10,000-lb. pressure with three power pedal strokes. *Warn Sales Co.*

... FOR MORE DETAILS, CIRCLE NO. 227

#### ALL-PURPOSE GYPSUM LATH ...may be attached to wood or steel studs

Tested on wood studs with the standard half-inch plaster scratch coat, brown coat and lime putty finish coat, this non-perforated gypsum lath passed the one-hour fire test for load-bearing walls. Flame-throwers, using napalm to create a particularly hot flame, further tested the lath by enveloping a section of wall with a ball of liquid fire. The wall was blackened, but otherwise untouched. This new gypsum lath gives greater plaster bond because indentations in the lath are scientifically spaced "keys" that grip the plaster when applied. *Fibreboard Paper Products Corp.*

... FOR MORE DETAILS, CIRCLE NO. 228

#### MAGNETIC REPLACEMENT SOCKET ...reduces waste of good magnets

If you're concerned with the waste of perfectly good magnets discarded with worn-out sockets used to drive self-tapping screws, you'll find this new socket of value. Equipped with removable and replaceable magnets, it comes in five sizes from  $\frac{1}{4}$  to  $9/16$ -in. A special assembly tool inserts magnets into new sockets quickly, simply and to exactly the right depth for proper magnetic contact with screw head. One customer reports these sockets wear ten times longer than



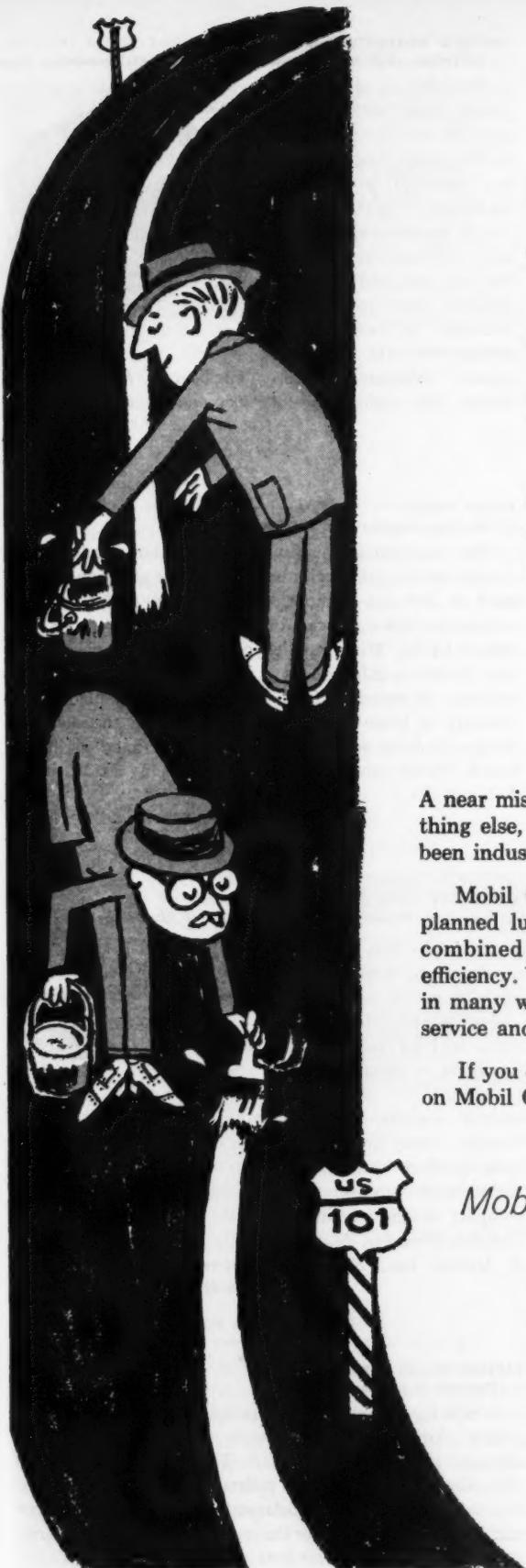
those used previously. *Snap-On Tools Corp.*

... FOR MORE DETAILS, CIRCLE NO. 229

#### LOW-COST ULTRASONIC CLEANER ...in several models, with or without glass beakers

In the lab or industrially, this compact multi-purpose Sonblaster has many uses. Twin beakers, whose contents are agitated ultrasonically at the same time, permit simultaneous wash and rinse of different solutions. The cleaning units can be used on delicate products and parts from optical lenses to miniature printed circuit boards, radioactive lab apparatus, gears, etc., as well as for ultrasonic research. The easily operated cleaners are claimed to provide a faster, cheaper way to clean fragile instruments, such as timing mechanisms. *Narda Ultrasonics Corp.*

... FOR MORE DETAILS, CIRCLE NO. 230



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A Mobil Program of  
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# Here's a Valuable Shortcut

**Stripping pigmented paints  
—with no need for pickling  
before repainting**

Oakite Rustrripper saves time in paint shops by doing complete stripping in one operation. Eliminates extra pickling (and neutralizing) to remove metallic pigments, phosphate coatings and rust that prevent successful repainting.

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TeeCo VARIABLE SPEED  
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The low cost TeeCo provides stepless speed changes without machine shutdown or changing belts. It has a floating wheel assembly that assures perfect belt alignment at any speed without loss of horsepower. Precision built of aluminum, bronze and steel, the TeeCo offers years of trouble-free service. For further information write TeeCo or fill in reader service card. Distributor inquiries invited.

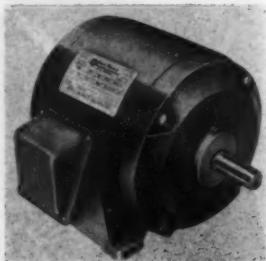
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... for more details, circle No. 45 on Reader Service Postcard

102

**INTEGRAL HORSEPOWER MOTORS**  
... polyphase, ball bearing, vertical and horizontal mounting types

Available in all standard speeds and voltages, this new line of motors features a low inertia, fast accelerating rotor of pressure-cast aluminum. The rotor is balanced to movement tolerance as precise as .0002 in., for long life and quiet operation. The motors are available in one to 250 horsepower in protected (open), weatherproof, corrosion- and explosion-proof



enclosures. *Reliance Electric and Engineering Co.*

... FOR MORE DETAILS, CIRCLE NO. 231

## EPOXY FINISH

... for high temperatures and longer pot life

This new epoxy finish with its minimum pot life of 48 hours can be applied with brush, roller or spray and can be used at 250-deg. without losing gloss or color. After a catalyst is added, it can be used for two or more days before jelling. When applied over the proper primer, the new finish is effective as a surface protector of wood, masonry or metal in food and meat-packing plants, particularly in brine or smoke rooms, and in the dairy industry. It dries within an hour, can be handled in two hours. Shows powerful resistance to many acids. *W. P. Fuller & Co.*

... FOR MORE DETAILS, CIRCLE NO. 232

## CABLE TYPE AIR HOISTS

... from 1 to 15-ton capacity, with choice of lifts, suspensions

For heavy duty industrial service, these hoists are especially useful where corrosive or very dirty conditions bring maintenance problems, or there is a safety hazard for hoists with electric motors. Infinitely variable lifting speeds, one hand pendant control, few replacement problems and compact design are among features. *Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div.*



... FOR MORE DETAILS, CIRCLE NO. 233

## TAPERED ROLLER CURVE

... Slippage is practically eliminated

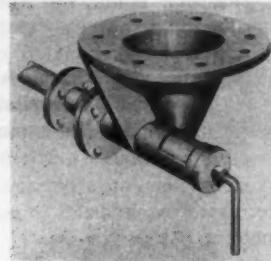
A new tapered roller curve in sections of 45- or 90-deg. angles provides a more effective carton alignment, with slippage practically eliminated. The 90-deg. section has 21 rollers, the 45-deg., 11 rollers. All are seamless steel tapered tubing. A bearing adaptor is pressed into the larger end of the roller to permit the use of the same size bearing at both ends. *Rapids-Standard Co.*

... FOR MORE DETAILS, CIRCLE NO. 234

**MATERIAL INTAKE VALVES**

...for use with all types of high vacuum pneumatic systems

These valves are for use with all types of high vacuum pneumatic systems employed in moving dry, free flowing, powdery or granular materials from hoppers, bins and dust collectors. Suitable for use on 2 through 6-in. pipe lines, they're designed for thorough mixing of air and material to insure smooth, non-clogging flow. U. S. Air Appliance Div.



Hoffman Machinery Corp.,  
Air Appliance Div.

... FOR MORE DETAILS, CIRCLE NO. 235

**TIME-CYCLE CONTROLLER**

...Increased flexibility for timed controlling processes

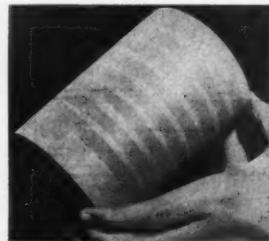
This new controller can time control ten variables for operation of tire presses, dyeing, water condition, etc. Ten pilots — pneumatic, electric or a combination — may be operated simultaneously or in any sequence, and each can perform up to 24 operations. Dogs set on the periphery of the timing disc determine timing of pilot operations, and intervals between operations can be as brief as four seconds. Timing discs range from 0-15 min. to 0-360 min. *The Bristol Company.*

... FOR MORE DETAILS, CIRCLE NO. 236

**ALUMINUM CASTINGS AND FORGINGS**

...with precision-welded zones for hardness, resistance

New aluminum welding alloys applied to selected areas of aluminum products, as in this zebra-striped piston shown, provide zones of super-hardness and high wear-resistance; retaining these qualities at high temperatures. Parts so treated could be used in automotive applications — piston ring grooves, brake drums, valve seats, etc.—where localized hardness is desired. One of the four alloys being tested



provides a Brinell hardness of 250 at room temperature, compared to the usual 110. *Aluminum Company of America.*

... FOR MORE DETAILS, CIRCLE NO. 237

**AIRLESS AUTOMATIZATION OF SPRAY-PAINTING**

...with high production gun and pump for rapid coverage

Airless spray painting opens new avenues of spray application in painting heavy machinery, interior structures and other surfaces where exhaust facilities for vapor-removal and overspray are limited. On exterior painting, this method permits rapid coverage and wide spray patterns without excessive mist or rebound and with sharp edges to eliminate masking and shielding. The spray unit is portable, with a single fluid hose to the gun providing maneuverability for hard-to-paint areas. *DeVilbiss Co.*

... FOR MORE DETAILS, CIRCLE NO. 238

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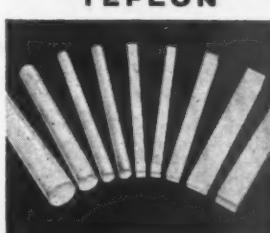
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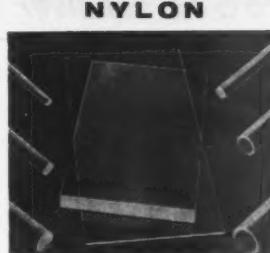
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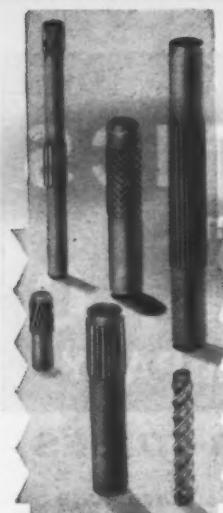
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**REVERSIBLE SHUNT MOTOR**

...small, versatile, with stable speed under varied load

This shunt motor, which has three lead connections, can rapidly and repetitiously respond to varied torque loading through a wide temperature range. Tests show motor-speed change, under varying loads, of less than 1% at -65° to +450°F. Available at speeds up to 25,000 rpm, and torques up to 2,000 ounce inches, it offers infinite variations in high speed/low torque or low speed/high torque. In addition to its torque-output efficiency, the shunt motor provides decreased requirements in power supply to those of series motors. *Hydro-Aire Co.*

FOR MORE DETAILS, CIRCLE NO. 239

**COATED FABRIC GLOVES**

...for positive protection against high-power solvents



Designed and treated for safe, effective handling of ketones, acetones, paint-stripping compounds and other hard-to-handle solvents, these SolvaSeal gloves are light-weight, rugged and durable. They're made with curved fingers, wing thumb construction and blunt finger ends for complete comfort. Inexpensive, they're a

cherry red color and come in women's 11-in. and men's 12 and 14-in. gauntlet style. *The Surety Rubber Co.*

FOR MORE DETAILS, CIRCLE NO. 240

**FLEXURE SPEED SENSOR**

...provides pneumatic speed control for motors, starters, other units

Unlike conventional governors or sensors, this flexure speed sensor has no flyweights or hinge points to induce friction. Of simple design, it is rugged and reliable, has virtually no hystereses, zero calibration shift. Installed in output shaft of power units, the control gives a pneumatic signal as function of centrifugal force predetermined



at any given rpm. *AiResearch Mfg. Div., The Garrett Corp.*

FOR MORE DETAILS, CIRCLE NO. 241

**LIGHTWEIGHT CUTTING ASSEMBLY**

...uses "Slip-In" cutting tips

Two models of this assembly, which permits use of "Slip-In" tips, have been introduced—one with a 75° head, the other with a 90° head. The tips eliminate the need for wrench tightening. Head and butt of the new assembly are pressure forged of dense brass; gases are kept separate by O-ring seals until they mix in the "Slip-In" tips. Lever control of cutting oxygen is provided. Capable of cutting 1½ in. steel, it is designed for use in aircraft and automobile manufacture, garages, and body and sheet metal shops. *Smith Welding Equipment Corp.*

FOR MORE DETAILS, CIRCLE NO. 242

WESTERN INDUSTRY/SEPTEMBER 1959

**CONVEYOR CLEATS**

...black or white rubber, or neoprene

These low-cost rubber conveyor cleats which are easily installed with belt punch and screwdriver, bolt securely to fabric, woven metal or chain belting; the resiliency of the rubber safeguards "soft" products and increases belt life. The rust-proof bolts and washers are countersunk to eliminate protruding surfaces



for sanitation and efficiency, making the cleats simple and highly effective.  
*Holz Rubber Co.*

... FOR MORE DETAILS, CIRCLE NO. 243

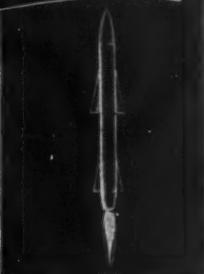
**ROLL FINISHING MACHINE**

... low-cost unit for precision finishing

Designed for small volume precision finishing of small parts such as screws, delicate gears and instrument parts, this roll finishing machine utilizes octagonal barrels of oil-resistant, steel-reinforced neoprene. The drive is enclosed in a molded fiber glass housing for operator safety. Eight barrels can be run simultaneously on the largest of the six models, and each can be removed or placed on rollers without shutting off the machine. A portable separator, with media pans and screens and mounted on casters, is also available. *Techline Div., Wheelabrator Corp.*

... FOR MORE DETAILS, CIRCLE NO. 244

**...from horse cars to rockets**



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WESTERN INDUSTRY/SEPTEMBER 1959

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Where exact temperatures must be maintained as on this plastic film drier, the ROTARY UNION is without an equal. It is self-adjusting to pressure, self-aligning to stress and strain, and requires no mechanical adjustments. This superb rotating joint is delivering long-lasting and extremely reliable service under the most critical conditions.

Wherever rotating connections are required for heating or cooling, you will find that the ROTARY UNION is your most dependable joint. Write for Bulletin 700F.

Pipe Sizes: 1/4" through 5"



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IT'S ONLY a one-man job to erect Sammons Adjustable Boltless Racks. Merely slip the load bar into two conveniently located slots on the uprights. Expand lengthwise or upwards as needed. Adjust height between load bars to accommodate the material. Double slots give double rigidity. You reduce material handling time, labor costs, damaged material. You free valuable floor space — speed up material flow . . . There's a Sammons Rack for your special requirements.

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LYNNWOOD, CALIF.

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105

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STEEL

ALUMINUM



## BAKER STEEL & TUBE CO.

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From high vacuum to 20,000 PSI and -85°F. to +360°F., only Stat-O-Seals offer safe, sure, effective sealing using the principle of controlled confinement of the seal plus mechanical bonding.

They will not "twist" in installing and there's no chemical bonding agent that can be attacked by corrosives . . . and: metal-to-metal contact; quick, visual inspection; simple, one-piece assembly; re-useable; o-ring style configuration for versatility and freedom from damage.

By the makers of Parker O-rings and Gask-O-Seals.

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106

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**SURESEAL GLOVES**

#### SURESEAL MOST SPECIFIED WHERE

- ✓ the handling of acids and other corrosive materials demand maximum hand protection.
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- ✓ positive protection against crippling and disfiguring accidents is a necessity.
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Surety Sureseal Gloves, (made from Hycar) give positive protection against the greatest number of acids and other corrosive liquids and wear up to 14 times longer than competitive materials. They are more snag, abrasion and puncture-proof and the exclusive Surety Turn-Cuff gives added protection for arms and prevents liquid from getting into the glove.

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WESTERN INDUSTRY/SEPTEMBER 1959



# WESTERN INDUSTRY NEWS

THE INDUSTRIAL WEST . . . ON IT'S WAY

PLANTS • PRODUCTION • DISTRIBUTION • PERSONNEL

## Solar Aircraft to Erect \$1,000,000 Facility

**SAN DIEGO**—Solar Aircraft Co. has revealed plans for construction of a \$1,000,000 engineering and research building on its bayfront plant site. May 1 has been set as occupancy date for the new 62,000-sq. ft. facility.

The new building will be used for Solar's expanding research into gas turbine engines, missile and space-craft, and industrial products.

## Portland Firm Will Build Hawaiian Envelope Plant

**HONOLULU**—Mail-Well Envelope Co. of Portland has announced plans for construction of Hawaii's first envelope-manufacturing facility. According to W. R. Lake, Sr., Mail-Well president, the new plant will be in operation before the first of the year.

Initial production capacity of the Hawaiian factory will be 100,000,000 envelopes a year. Management personnel for the plant will be transferred from Portland, where the firm is located at 2515 Mailwell Drive.

## P-I-E Opens Branch Unit in Ogden, Utah

**OGDEN, UTAH**—Branch operations have been established here at 3160 Reeves Ave. by Pacific Intermountain Express, interstate motor freight common carrier.

Manager is Ernest Kellerstrass, who has been in the motor carrier field for 31 years, and a P-I-E commission agent since 1942. Salesman at Ogden is L. R. Larson, who joined the firm in 1953 as a Salt Lake City sales representative.

## Proctor-Gamble Adds to Sacramento Facilities

**SACRAMENTO**—A 63,000-sq. ft. addition to its plant warehouse here was started recently by Procter & Gamble Mfg. Co. The new structure will increase warehouse space by about 50% and is slated for completion in mid-November.

## National Can Schedules Second Plant in Northwest

**YAKIMA, WASH.**—The second Northwest plant for National Can Co. will be built near Union Gap, south of here, according to a recent company announcement. Earlier this summer the Chicago firm revealed plans for a \$1,000,000 manufacturing and warehouse facility in Vancouver.

The Union Gap plant will be a 60,000-sq. ft. installation scheduled to start operations by Nov. 1. Expected production capacity will be 100,000,000 cans a year for food processing plants in the Yakima valley and nearby areas.

About 50 persons will be employed.

## AiResearch Adds to Land, Buildings in Phoenix

**PHOENIX**—AiResearch Phoenix Division, The Garrett Corp., has announced acquisition of 33 acres of land and 155,000 sq. ft. of plant-office space adjoining its plant on Sky Harbor Airport. The expansion will give AiResearch a total of 91 acres of land and 650,000 sq. ft. under roof.

Two 60,000-sq. ft. warehouses and 35,000 feet of factory and office area comprise the new buildings, acquired by Garrett from the Babb Co.

Need for additional buildings to house growing current projects, consolidation of outlying locations and, principally, the need for expansion during the next five years were reasons for the acquisition, according to J. J. O'Brien, division manager.

## Georgia-Pacific May Build Pulp Mill in Juneau, Alaska

**JUNEAU, ALASKA**—Possible construction of a newsprint paper pulp mill here is under consideration by Georgia-Pacific Alaska Co. Legislation to provide for a \$40,000,000 power plant if the mill is built is being studied.

Georgia-Pacific has been granted timber cutting rights by the U. S. Forest Service if it has a pulp mill in operation by 1965.

## Stanley Project to be First for New Industrial Park

**SAN FRANCISCO**—First project in the new Crocker Industrial Park near Brisbane in San Mateo county will be a warehouse and office facility for The Stanley Works of New Britain, Conn.

Part of Stanley's regional expansion program, the new facility will cover 45,000 sq. ft. on a four-acre site. Its designed for doubling the size later.

The new building will house regional sales and warehouse operations of the Stanley Hardware Division for California, Washington, Oregon, Arizona, Nevada and Utah; of Stanley Tools Division for California, Oregon, Washington and Nevada, and of the Stanley Steel Strapping Division for Northern California.

The 250-acre industrial park, which will be developed at a cost of some \$25,000,000, is expected to attract warehousing and distribution facilities, some light industries, and service establishments.

Work has begun on the first section of the park, one that will be made up of 23 units for use by as many firms. Estimated cost of development for each unit is \$500,000.

## Stauffer Alum Plant Slated for Vernon, Calif.

**VERNON, CALIF.**—Construction plans have been announced by Stauffer Chemical Co. for a liquid alum plant adjacent to the firm's sulfuric acid plant here. Completion is scheduled for late this year.

Capacity of the new facility will be 1,000 tons monthly. Bauxite will be imported.

This will be the third Western alum plant for Stauffer. Others are at Richmond, Calif., and Portland, Ore.

## \$2,000,000 Expansion at Utah Uranium Plant

**MOAB, UTAH**—A \$2,000,000 expansion of its plant here has been announced by Uranium Reduction Co. The project calls for conversion of one of the existing acid circuits to a carbonate leaching circuit utilizing autoclaves.

GEARS FOR INDUSTRY  
THE **Lufkin LINE**  
OIL FIELD PUMPING UNITS

## COVERING THE WATERFRONT

Literally, Lufkin now covers the waterfront—the Pacific Coast waterfront, Seattle, Portland, San Francisco, Los Angeles. Mainly devoted to oilfield sales until 1948, the Pacific Coast Division was formerly referred to as the California district.

Since 1948, the Pacific Coast Division entered into more diversified activities, and especially, industrial gearing.

To implement this growth, the Company approved the appointment of J. W. Minder Chain and Gear Company, our Portland representatives, in 1950.

Late in 1958, a Seattle concern, Marine and Industrial Supply Company, was selected to cover Washington, Southern British Columbia, and with representation in Alaska.

These two well known and reliable firms maintain contact with leading industrial plants throughout the Northwest, such as lumber, paper, pulp mills, refineries, aluminum, aircraft, hydro-electric projects, marine operators, and the like.

Industrial San Francisco and Oakland Bay area is covered by Lufkin out of Los Angeles headquarters.

In the comparatively brief period since Lufkin's entry into the gear field, industry on the Pacific Coast has indeed responded with enthusiastic acceptance—acceptance which the petroleum industry has long given to make Lufkin Pumping units the national criteria of comparison.

*V. J. Fawcett*  
**Lufkin** FOUNDRY  
& MACHINE COMPANY

... for more details, circle No. 55  
See listing in Directory Section

108



V. J. Fawcett

## \$2,500,000 Expansion for Continental Can

PITTSBURG, CALIF.—A substantial expansion of its metal lithograph facilities here has been announced by Continental Can Co., Pacific Metal Division. Estimated cost of the project is \$2,500,000.

Size of the present building will be increased by about 125,000 sq. ft., and employment will be about 250, on a double-shift basis.

Addition of new facilities is part of Continental's over-all program for shearing tinplate from coils, rather than purchasing plate in flat sheets as done previously. New equipment will include that for fabricating can tops and bottoms.

Continental also operates a fibre drum and corrugated box plant here.

### U. S. Plywood Schedules Two New Facilities in West

SHASTA, CALIF.—A fir plywood plant to supplement pine plywood facilities here is scheduled for construction this year by United States Plywood Corp. as part of a \$10,000,000 expansion-improvement program for the current fiscal year. A similar plant at Gold Beach, Ore., is planned as an addition

to the present veneer mill, plus new facilities in Wisconsin and Virginia.

### Kester Solder Co. Starts Production at Western Unit

ANAHEIM, CALIF.—Production of solder and fluxes starts this month at the new Western plant of Kester Solder Co., Chicago.

The new facility at 913 Orange-thorpe Park will produce all Kester products—flux-core solders, all types of soldering fluxes, preformed solder and specialized industrial solders.

Besides the main factory in Chicago, Kester has branches in Newark, N. J., and Brantford, Can.

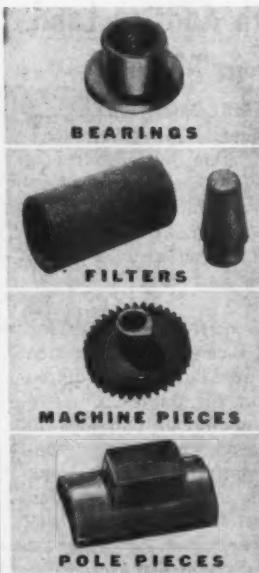
### PG&E Starts Construction on Geothermal Power Plant

HEALDSBURG, CALIF.—Construction on a power plant that is the first of its kind in North America was begun recently by Pacific Gas & Electric Co.

The 12,500-kilowatt geothermal station, scheduled for completion next summer, will utilize natural steam brought from wells at the historic Geysers site by the Thermal and Magma Power companies.

The plant, which represents a PG&E investment of about \$2,000,000, will be the world's first privately-financed geothermal plant.

## Powdered Metal Parts



ASCO powdered metal parts offer many proven advantages. First, economy, with savings up to 40%. Second, dimensional control superior to cast parts. Third, elimination of many secondary machine operations. Fourth, improved function with self lubrication. Fifth, the ability to combine metallic and non-metallic elements. These unique advantages are yours only in powdered metal... why not call or write Asco today for full information.

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See listing in Directory Section  
WESTERN INDUSTRY/SEPTEMBER 1959

## Alaskan Wood Preserving Plant for Koppers Co.

WHITTIER, ALASKA — Alaska's first wood preserving plant, scheduled to be in operation within a year, will be built here by Koppers Company, Inc., Pittsburgh, Pa. The Wood Preserving Division has started erection of the facility on property leased from the Alaska Railroad, adjacent to Columbia Lumber Co. property.

While the Alaska plant originally will have one treating cylinder, it will be able to pressure-treat wood with creosote for use on railroad ties and telephone poles; with Wolman salts, a frequently-used lumber preservative, and with special chemicals to make wood non-combustible.

Chemicals for the operation will be brought in from Seattle, where power will be supplied from the Columbia Lumber Mill. Major wood to be used will be hemlock, previously unmarketable in this area.

Whittier, which is also a U. S. Army base, is located on Prince William Sound, about 65 miles below Anchorage.

Manager of the Alaska plant is Guy Phillips, formerly manager of the division's Wauna, Ore., plant.

## Garrett Freightlines Plans Further Service Extension

POCATELLO, IDA.—Garrett Freightlines, Inc., announces that its applications for purchase and merger of Inland Motor Freight and its subsidiary, Pacific Highway Transport, of Spokane and Seattle, and Northwest Freight Lines of Billings, Mont., will be heard by the Interstate Commerce Commission next month.

With the anticipated favorable action from the ICC, Garrett will add Washington, Minnesota and North Dakota to its area of motor carrier service. Garrett has also applied for extension to Albuquerque, N. M., opening up a new trading area and distribution center for single-line service to the Northwest.

## Bay Area Electronics Firm Plans Increase in Facilities

SOUTH SAN FRANCISCO — Construction due to start this month by Applied Electronics Co., Inc., will increase facilities for the manufacture of marine radiotelephones, depth sounders and direction finders. The firm will build a 22,000-sq. ft. plant addition and has also acquired an additional 51,000 sq. ft. of land adjacent to its plant at 213 E. Grand Avenue.

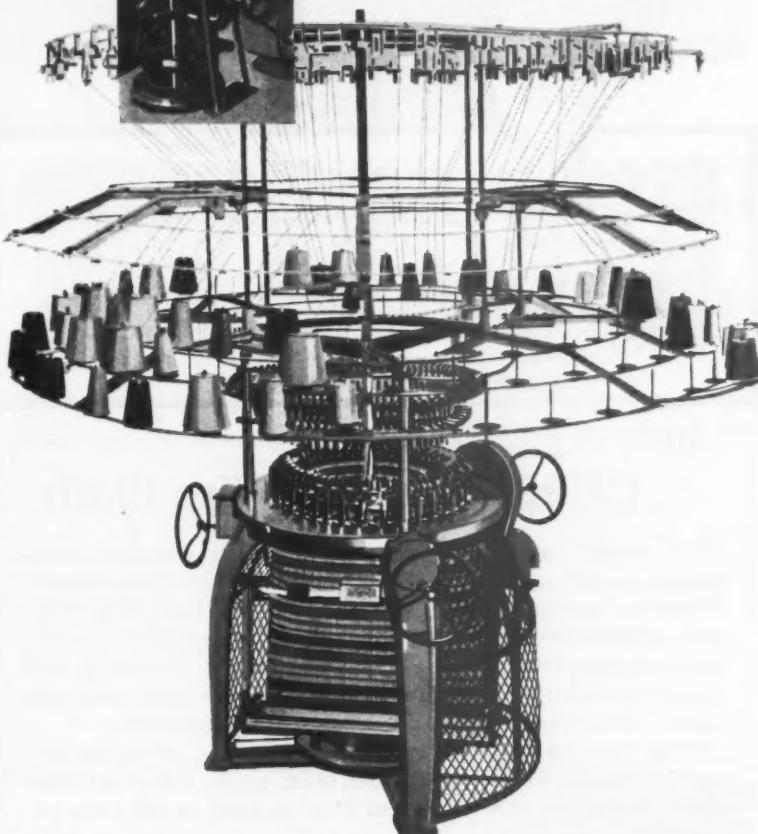
## An essential tool of the knit apparel industry...

### The Needle Used in Knitting Machines



**SMALLEST MACHINES** use 5 to 10 needles with each performing its job 240 times per minute to knit tubing  $\frac{1}{8}$  to  $\frac{3}{8}$  inches in diameter depending on the yarn used.

**LARGEST MACHINES** utilize 1,500 needles...each performing its job 534 times per minute to knit tubing 28 inches in diameter in a varied assortment of colors of a predetermined pattern.



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### ...modern banking services

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serving the Industrial Center of the West.

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CF&I produces Industrial Wire Cloth in carbon, galvanized and stainless steels as well as in aluminum, brass, copper, monel and other alloys. Screen openings as large as 6" or as small as 200 mesh are furnished.

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Coburn Overhead Conveying Systems • Sliding and Fire Door Hardware  
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Edmonton • Vancouver • Winnipeg

... for more details, circle No. 58 on Reader Service Postcard

## \$7,000,000 Paper Process Plant for Ripon, Calif.

RIPON, CALIF.—A \$7,000,000 paper processing plant will be built near here by The Lee Paper Co., Vicksburg, Mich., and the Simpson Paper Co., Everett, Wash. The two firms are in the process of merging.

A multiple-story structure, the plant will cover 220 acres and will have an annual capacity of 15,000 to 18,000 tons of high grade paper. Scheduled to be in operation in 1½ to 2 years, the plant will employ 100 workers in its first stage of operation. This will be doubled in two years, with an estimated \$1,000,000 yearly payroll.

Simpson Paper is a division of Simpson Timber Co., which has timberlands and manufacturing facilities in Washington, Oregon and California. Its mill in Everett, Wash., employs over 1,000 people in pulp, paper and converting operations. The company also opened a converting plant in Los Angeles recently.

## Rapistan of California Opens LA Division Office

LOS ANGELES—A Los Angeles Division office has been opened at 429 S. Western Avenue by Rapistan of California, Inc., according to an announcement by Earl Hoyt of San Francisco, general manager.

Hardin Maxwell will head the new office serving Southern California with a complete planning, engineering and installation service primarily in flow systems for various industries.

The Los Angeles office will represent the Rapistan line of power gravity and overhead conveyors. The E. A. Stevenson Co. here will continue in a distributor capacity in retail areas.

## Fairchild Semiconductor Opens New Facilities

MOUNTAIN VIEW, CALIF.—Official opening of a 68,000-sq. ft. plant here was held recently by Fairchild Semiconductor Corp. of Palo Alto. The new facility is located at 545 Whisman Road on a ten-acre site across from Moffet Field. Fairchild is also expanding its Palo Alto research facilities.

## Colorado A-C Distributor

DENVER—New Colorado distributor for Allis-Chalmers motors is Power Transmission Co., Inc., 4965 Jackson St., headed by J. R. Torpey, president.

## **Consolidated Freightways Starts New Hawaii Service**

MENLO PARK, CALIF.—Consolidated Freightways and Hawaiian Marine Freightways have begun a complete, door-to-door, containerized cargo service between San Francisco and Hawaii.

The service includes optional pick-up and/or delivery; single carrier responsibility for shipments between inland points on CF routes and Honolulu, and all-inclusive rates from the Bay Area to Honolulu.

The schedule calls for a ship to leave San Francisco each Tuesday night and arrive in Honolulu to discharge cargo early each following Tuesday morning. Vessels will leave Honolulu Thursday and arrive the following Wednesday.

A Hawaiian container service will handle assembly and distribution through container stations in San Francisco, Oakland and Honolulu. An expanded supply of containers is available for the service, Consolidated reports.

## **Portland Chemical Firm To Treble Facilities**

PORLAND—Miller Products Co., manufacturer of chemicals, will treble its manufacturing space with acquisition of facilities at 7737 N. E. Killingsworth St., formerly the Kaiser-Fraser automobile assembly line. Cost of purchase, remodeling and new construction is estimated at over \$500,000.

Expansion into new product lines and an increase in personnel are also planned by the company. New construction will consist of a 24,000-sq. ft. building for manufacturing aerosol products and another 10,000-sq. ft. building.

## **Tektronix, Inc. Starts \$600,000 Building in NW**

BEAVERTON, ORE.—Tektronix, Inc., broke ground recently for a \$600,000 building to house its ceramic division. The one-story building, which will cover about 230,000 sq. ft., will adjoin the firm's present assembly plant northwest of here. Tektronix manufactures cathode-ray oscilloscopes and related products.

## **Salt Lake City Branch**

SALT LAKE CITY—General Can Co., which has offices in Los Angeles, San Francisco and Seattle, has opened a branch here at 40 N. 3rd W., to supply the intermountain area. Lemar T. Pomeroy is district manager.



*New pneumatic strapping tools . . .*

# **INCREASE OUTPUT BY 50%!**

**TIMED IN FIELD TESTS**, the new line of A. J. Gerrard pneumatic stretchers were able to cut strapping time up to 50%. These new stretchers enable an operator to tension strap by a simple twist of a dial. The stretchers will take various widths and thickness of band . . . will also operate well on an extremely small surface. They are easy to load. Strapping can be used from a continuous coil for fast, economical operations. Because of this unique combination of features, these tools are rated as the most versatile stretchers yet developed.

USE THE COUPON or the reader service card for complete specifications. Upon request we will also include our new catalog illustrating a complete line of strapping and packaging equipment and supplies.



### **CHECK THE FEATURES OF THIS STRETCHER**

- Very small strapping surface required.
- Use strapping direct from coil—no waste.
- Adjustable tension control.
- Strap easily inserted into stretcher.
- Easily suspended on counter balancer.



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 Send free copy of Handbook of Strapping and Materials Handling Products.

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*. . . for more details, circle No. 59 on Reader Service Postcard*

## Multi-Million Dollar Plant for California Chemical Co.

RICHMOND, CALIF.—The West's first plant for manufacturing maleic anhydride will be built here by California Chemical Co., subsidiary of Standard Oil Co. of California.

The multi-million dollar unit, to be erected at Standard's refinery here, will have a yearly capacity of 20,000,000 lb. of the chemical intermediate, which is widely used in plastics, paints, textile wetting agents and agricultural chemicals.

Feed stock for the new facility will be company-produced benzene. Marketing will be carried on by California Chemical's subsidiary, Oronite Chemical Co.

Completion of the plant is scheduled for mid-1960.

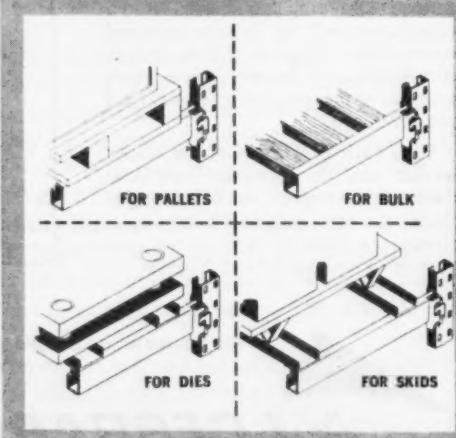
### Pipelines in Hawaii

HONOLULU—Standard Oil of California plans to install two submarine pipelines to transport oil, gasoline, petroleum and water from a tanker anchorage off Barber's Point to company land near there.

## GREEN-PENNY



BENCHES  
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LADDERS  
LOCKERS  
PARTITIONS  
PARTS CASES  
RACKS  
ROTARY BINS  
SHELVING  
SHOP BOXES  
SLINGS  
STOCK CARTS  
STOOLS  
TABLES  
TOOL STANDS  
TOOL STORAGE UNITS  
TRUCKS  
WHEELS  
WIRE MESH PARTITION



... for more details, circle No. 60 on Reader Service Postcard

### Weyerhaeuser Drops "Timber" from Company Name

TACOMA, WASH.—Effective Sept. 1, the word "timber" was dropped from the name of the Weyerhaeuser Timber Co., with the name change indicating the wide range of products now made by the Northwest firm. Weyerhaeuser is also adopting a new symbol—an abstract tree within a triangle—for products manufactured at plants in 26 states.

Other changes include making Weyerhaeuser Sales Co. operations part of the lumber and plywood division, and discontinuation of the Kieckhefer-Eddy division title. The latter's operations will be grouped under divisional titles related to function and product.

Products of Weyerhaeuser's eight integrated mill sites in the Northwest include containerboard, pulp, plywood, hardboard, lumber, chemicals and insulation products. Other products are made throughout the U. S.

### Union Carbide to Expand California Tungsten Plant

BISHOP, CALIF.—Union Carbide Nuclear Co., division of Union Carbide Corp., is expanding its tungsten refining plant here in order to produce a high-purity tungsten raw material—ammonium paratungstate—at the mine site. The expansion is scheduled for December completion.

The new product is used in making cemented tungsten carbides, lamp filaments, and for many electrical applications.

### \$2,000,000 Fruehauf Plant Starts Production Soon

ONTARIO, CALIF.—Production is expected to start this month at the \$2,000,000 Fruehauf Trailer Co. plant, largest of the firm's manufacturing centers west of the Mississippi.

First model off the production line will be Fruehauf's new van-type trailer that has complete interchangeability of aluminum and steel components. Other products will be vans, flatbed and heavy duty lowboy trailers, machinery trailers and dollies.

### LA Rep for Motorola

LOS ANGELES—Motorola Communications and Electronics, Inc., has appointed Wallace and Wallace, 1206 Maple, as manufacturers' representatives for the company's line of precision instruments. The appointment is part of the firm's program of broadening its distribution organization to handle new products.

## Anchor Hocking Bay Area Facility Starts Operation

SAN LEANDRO, CALIF.—Anchor Hocking Glass Corp. started operation recently at its newest Western plant, located on a 23-acre tract at 1940 W. Ave. 137. The site was acquired in 1956 and a warehouse built there last year.

An automated glass factory, the San Leandro plant houses all new equipment including furnace, glass container forming machines and lehrs. Initial production involves glass food and general purpose containers. The plant is served by both railroad and truck lines.

The San Leandro plant is the third to be established by the firm in California. Others are the Maywood Glass Co., Los Angeles, and the Pacific Coast Closure Division in South Gate, with all three under Maywood Glass management. *Howard V. Fulton* is in charge of all West Coast operations for Anchor Hocking, with *R. H. Dallas* as sales manager and *W. E. Boschin*, factories manager.

Plant manager at San Leandro is *J. K. Carnahan*.

## \$1,000,000 Montana Iron Ore Properties Sold

DILLON, MONT.—Iron ore properties near here were bought recently by North American Utilities Corp. of Canada for a reported \$1,000,000 and future royalties on the ore. Seller was Minerals Engineering Co. Grand Junction, Colo., which has been developing the Carter Creek properties for the last three years.

North American plans to construct a steel plant in southern Alberta and will use the ore to feed its mill.

According to *Blair Burwell* of Minerals Engineering, about 60,000,000 tons of iron ore have already been blocked out on 20% of the property.

## Rucker Moves to Larger Quarters in Portland

PORLTND — New, larger quarters at 1744 S. E. Hawthorne Blvd. have been occupied recently by the Rucker Co., headquartered in Oakland. Warehousing facilities have been doubled at the new location and service and repair departments expanded.

*Laurel E. Cooley* has been transferred from Oakland to join the Portland sales staff, under direction of *Norman B. Dorries*, branch manager.

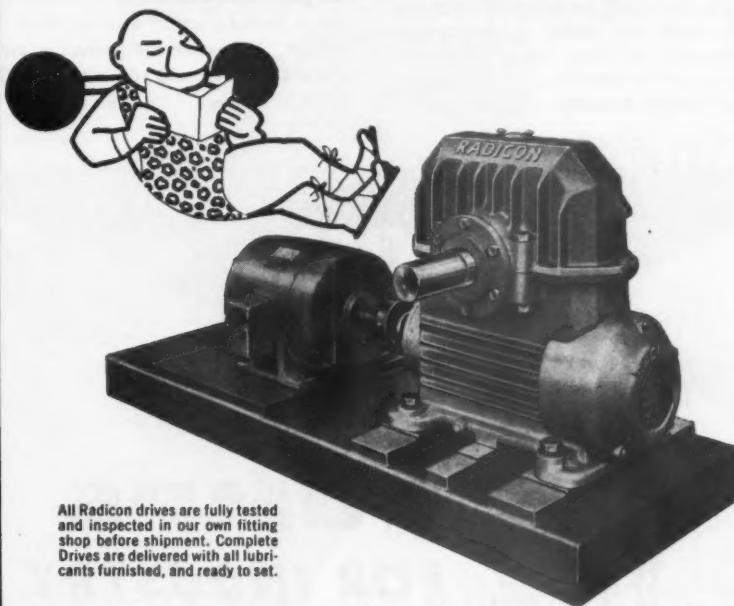
## Rust-Oleum Distributor

STOCKTON, CALIF.—Delta Rubber Co. has been appointed a distributor for Rust-Oleum Mfg. Co., Evanston, Ill.

## Almost Nothing To Do...

when you select—

# RADICON COMPLETE DRIVES



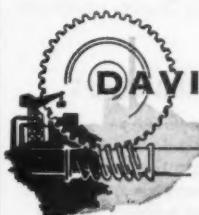
All Radicon drives are fully tested and inspected in our own fitting shop before shipment. Complete Drives are delivered with all lubricants furnished, and ready to set.

Eliminate a major part of your drive design problems—just position the efficient new Radicon Complete Drive, set six bolts, and you're ready to roll!

No need to buy reducers, motors, couplings—then spend time shimming and aligning. Radicon reducers and motors are already carefully shimmed and aligned on heavy fabricated steel base plates, of double box construction, firmly ribbed for rigidity. This means minimum stress at the flexible coupling...long service, low maintenance.

Fan-cooled Radicon Speed Reducers, like the type RHU shown with the above complete drive, are being specified by original equipment manufacturers in many industries these days. They have learned Radicon's ability to withstand extremes of temperature, dust, dirt and rain—all with low initial cost, and low maintenance! Find out for yourself—write or phone today.

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... for more details, circle No. 61 on Reader Service Postcard  
See listing in Directory Section

## Particle Board Facility to be built at Albany, Ore.

ALBANY, ORE.—Wood Fiber Co., a recently organized firm, will build a \$1,500,000 particle board plant on a 15-acre tract near here. A 60,000-sq. ft. facility, the plant will have a daily capacity of 125 tons of board.

The plant will be designed to utilize mill waste not usable at the nearby Western Kraft Paper plant. Manufacturing will be done by a new technique that involves a system of particle selec-

tion by air flotation to form the mat from which the board will be pressed.

Plans also call for construction of a shipping warehouse. The plant is scheduled to be in operation next April.

### Facilities in Richmond

RICHMOND, CALIF.—Stauffer Chemical Co. plans construction of a warehouse and a manufacturing area at 1415 S. 47th St. The expansion project, to cost about \$132,000, will add some 28,000 sq. ft. to present facilities.

## Chemical Firm Schedules Resin Plant in Portland

PORLAND—Evergreen Chemical Co., a new corporation, will construct a plant for manufacture of glues and resins for the plywood industry. The new facility, scheduled for operation late this year, will be built on a tract in Linnton. Capacity is expected to be about 1,000,000 lb. monthly.

Most of the plant's output will go to Multnomah Plywood and Astoria Plywood, both cooperatives and stockholders in the new firm. *Jack H. Carroll* is president and general manager.

## Computer-Measurements Occupies New Facility

SYLMAR, CALIF.—Computer-Measurements Co. has moved into its new 26,000-sq. ft. plant at 12970 Bradley Avenue, a facility designed specifically for an electronic manufacturing operation.

The electronics division of Pacific Industries, Inc., of San Francisco. Computer-Measurements was formerly located in North Hollywood. The company manufactures high speed counting, timing and frequency measuring equipment.

## Miller & Stern to Handle Atkins Saw Products

SAN FRANCISCO—Atkins Saw Division, Borg-Warner Corp., Indianapolis, has named Miller & Stern Supply Co., Division of Warren & Bailey Co., as a distributor for Atkins industrial products.

A leading Bay Area distributor, located at 1435 Folsom St., the firm will handle Atkins' complete line of industrial woodcutting and metal cutting saws, as well as machine knives, metal shears, saw tools and accessories.

## Idaho Cold Storage Plant Starts Expansion Program

NAMPA, IDA.—An expansion program begun recently at the Terminal Ice and Cold Storage Co. plant here will increase storage facilities to 2,000,000 cu. ft., making it one of the largest commercial storage plants in the West. Temperature and humidity controls to be installed will provide automatic defrosting for the plant.

## New Salinas Factory

SALINAS, CALIF.—Plans for construction of a 60,000-sq. ft. factory on a 12-acre site here have been announced by J. M. Smucker Co., Orrville, O., manufacturer of preserves and jellies.

# PACIFIC

## Features

# PUMPS

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## Hawaiian Steel Pipe Facility Is Dedicated

HONOLULU—Dedication ceremonies were held at Barber's Point recently for the steel pipe manufacturing plant established here by Southern Pipe Division of U. S. Industries, Azusa, Calif. The ceremonies were held just seven weeks after start of construction on the facility at the James Campbell Industrial Park.

First order is for 50,000 feet of large diameter pipe for the Honolulu Board of Water Supply. Plans call for later expansion of facilities to produce a complete range of pipe sizes from 4 to 48 in., with all types of coatings and linings.

## Guardian Electric Buys Electro Switch Firm

CULVER CITY, CALIF.—Guardian Electric Manufacturing Co. of California, Inc. has purchased Electro Switch and Controls, Inc., at 5755 Camille Ave., where manufacturing of Electro Switch products will continue.

By the acquisition, Guardian relays and other components and controls for aircraft, missile and industrial products will be available from a Western plant for the first time, according to George G. Rowell, president of the new firm.

## Western Dynamics, Seattle, Named by Parker-Hannifin

SEATTLE—Western Dynamics, Inc., 220 Westlake N., has been named a distributor for Crown compressed air preparation units made by the Hannifin Co., division of Parker-Hannifin Corp.

The distributor, according to R. W. Steele, general manager, also handles Parker tube and hose fittings and hydraulic accumulators. Technical assistance on these products is available from N. G. Burkhardt, Parker-Hannifin manager of distributor sales in the Pacific Northwest.

## High Temp. Brazing Furnace

MAYWOOD, CALIF.—Metallurgical Consultants, Inc., 4935 E. Slauson Ave., has installed a new bell type furnace for high temperature brazing that will provide controlled temperatures up to 2250 deg. A gas furnace, it increases the company's high heat capacity by 50%.

## L. A. Steel Casting Site

LOS ANGELES—Purchase of a 12-acre plant site in Santa Fe Springs has been reported for Los Angeles Steel Casting Co., 6100 S. Boyle St.

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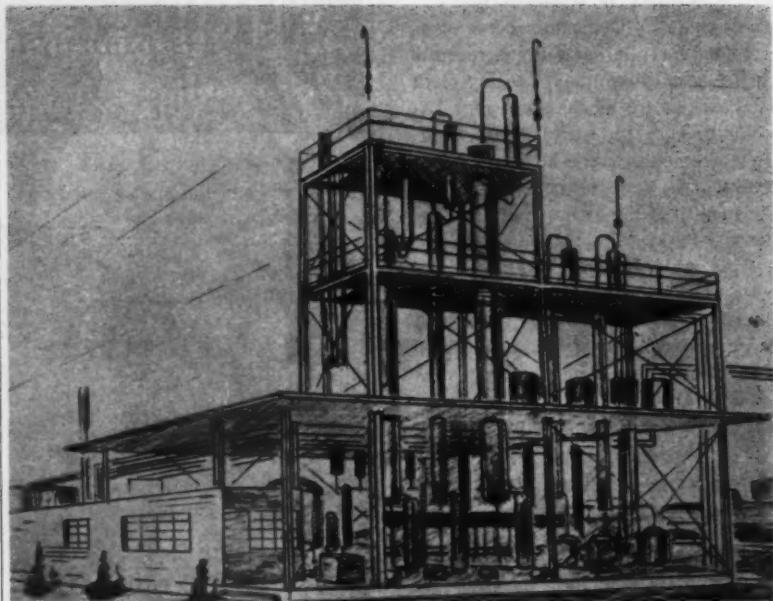
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PORLAND—Pacific Carbide & Alloys Co. has revealed plans to build a \$500,000 plant for production of vinyl acetate monomer, a facility that will be the first of its kind in the West.

Site for the chemical plant will be adjacent to the firm's carbide and acetylene plant on N. Columbia Blvd. at Hurst Avenue.

Initial annual capacity will be 5,000,000 lb. of vinyl acetate, with provision for doubling this as the market increases.

An intermediate chemical product widely used in plastics, synthetic fabrics, adhesives, paints, etc., vinyl acetate is used in the manufacture of phonograph records. Converted to polyvinyl alcohol it is used in making products for textile and printing industries.

Raw materials for the new plant will be acetylene from the existing plant and acetic acid, which will probably be shipped in from the Gulf states.

### \$1,000,000 Colorado Power Plant Now in Operation

DENVER, COLO.—The Denver Water Board's \$1,000,000 power plant at the new Williams Fork reservoir near Parshall went into operation recently. The plant's power production will be sold to the Public Service Company for distribution. The board expects an income of about \$90,000 annually from sale of the power.

The plant is expected to replace power the Bureau of Reclamation will lose when water from the Blue River is diverted to Denver. The plant was a required feature of the 1955 decree giving Blue River water rights to the city.

### Carloading Terminal in LA

LOS ANGELES—A \$1,500,000 terminal is scheduled to be completed here next month by Western Carloading Co. The structure will be 1,500 ft. long and 95

ft. wide, with trackage to accommodate 60 freight cars and loading facilities for 300 trucks. A drag-line conveyor will be part of the equipment.

### Uranium Upgrading Plant Completed in Wyoming

RIVERTON, WYO.—A \$100,000 uranium ore upgrading plant has been completed in the Gas Hills area near here by International Mining Co., Greenville, O., and American Mills, Inc., Dallas.

Arthur Dearing, president of International, designed the process which uses ultra high frequency sonar waves and electrical charges, improving low grade ore to the point where uranium oxide can be extracted commercially.

He said uranium can be extracted from ore that tests as low as .04 per cent. A .2 or .3 per cent uranium content is usually necessary for economic extraction.

## American-Marietta Plans California Resin Plant

RICHMOND, CALIF.—Construction plans for a synthetic resin manufacturing plant on a ten-acre site in North Richmond have been revealed by American-Marietta Co., Seattle.

Regarded as an initial phase of the firm's expansions into California, the proposed facility will be designed for an annual production capacity of 28,000,000 lb. of resins. More than half this amount will be produced during 1960, with full capacity production scheduled for 1962.

The Bay Area plant will be the sixth installation of American-Marietta's Adhesive, Resin & Chemicals Division. Other Western plants are in Portland and in Seattle, where the firm in June opened a new \$1,000,000 research center.

## Linde Installs Argon Storage Unit for FMC

SAN JOSE, CALIF.—Gaseous argon for automatic welding operations on the M113 aluminum armored personnel carriers being manufactured by Food Machinery and Chemical Corp. will come from a storage-distribution unit installed by Linde Co., Division of Union Carbide Corp.

First such unit was put in service recently for training of 150 FMC employees in the welding process. Its capacity is 25,000 cu. ft., while that of a second unit to be installed later is 93,000 cu. ft.

FMC has a \$34,600,000 contract for production of the new amphibious tracked carriers, which are light enough to be parachuted to earth in air drops.

## \$400,000 Warehouse Slated for Construction in Oregon

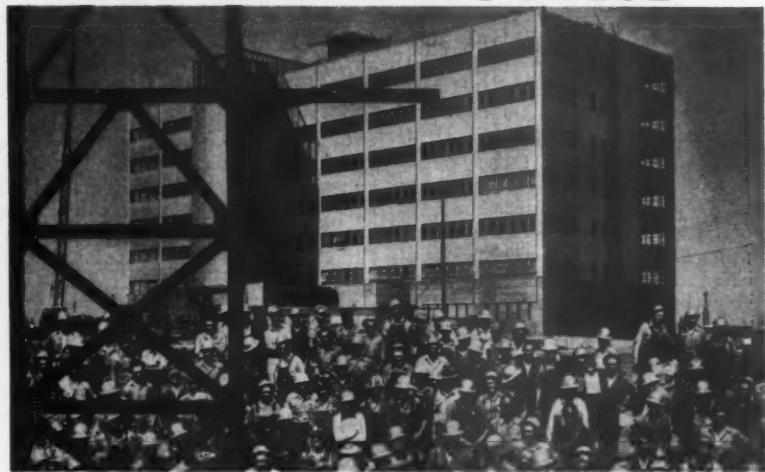
PORLAND—Construction plans for a \$400,000 distribution and storage warehouse in Milwaukie Industrial Park have been announced by Oregon Transfer Co.

Primarily a grocery warehouse, the new facility will provide 70,000 sq. ft. of storage space. The one-story structure will have inside rail trackage for all-weather loading, and loading docks to accommodate eight trucks.

## Denver Representative

DENVER—The Kenneth B. Schumann Co., 1073 Galapago St., has been named a representative for the Conduit Div., Clayton Mark & Co., Evanston, Ill. The Denver firm will serve Colorado, Wyoming and Utah in supplying thin wall steel conduit and rigid conduit.

## LONG BEACH, CALIFORNIA OFFERS INDUSTRY



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A total of 1,558 ships called at the Port last fiscal year. Each ship spent about \$30,000 for fuel, food, hardware, other supplies. Sixty-five thousand seamen each spent locally an average of \$82 per call. This represents a total bonanza in cash money of \$52,070,000 for the economy of Long Beach... through Port payrolls, retail sales and in other ways. Debt-free Long Beach Harbor, a model port, man-made to suit the shipper, builds purchasing power as it serves the shipping needs of industry in this area.

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## Kennecott Lets Contract for Utah Smelter Project

SALT LAKE CITY — Kennecott Copper Corp. has announced award of a contract to Western Knapp Engineering Co., San Francisco, to engineer part of a proposed \$10,000,000 improvement-modification program at its Utah Copper Division smelter.

Conversion of the present pre-roasting process to a direct smelting process; modernization of the materials handling system; enlargement and modernization of the three reverbera-

tory furnaces and installation of new waste heat boilers are included in present plans.

The smelter was purchased early this year as part of Kennecott's company-wide integration program.

## Plastics Firm Moves

VENICE, CALIF.—Aeroplastics Corp., a leading custom molder of expandable polystyrene, moved recently from El Segundo to new quarters near the Venice yacht marina. The firm's new 12,000-sq. ft. building, is the first of four planned on a five-acre site.

## Bruning Plans \$250,000 Facility in Seattle

SEATTLE — Charles Bruning Co. will build a \$250,000 warehouse-office facility at 5901 Fourth Ave. So. The building will comprise 18,000 sq. ft., and is designed for ready expansion to use more of the 70,000-sq. ft. tract.

Brenton R. Nelson is Seattle branch manager for the company which manufactures copy machines and supplies for offices and for engineers and architects.

## Industrial City Planned in Milwaukie, Ore.

MILWAUIKE, ORE. — A new industrial center, to be known as the Milwaukie-Minthorn industrial city, is being planned for a 150-acre tract in this area. The area lies south of Southern Pacific tracks along Railroad Avenue east of Milwaukie. Called the first industrial city in the Northwest, the project will probably encompass some 165 acres.

## Republic Manufacturing Opens Van Nuys Office

VAN NUYS, CALIF.—A West Coast office was opened September 1 by Republic Manufacturing Co., Cleveland hydraulic valve manufacturer, at 15840 Strathern St. Manager is Carl Drensko, with Stewart Cozz and Alan Pinch as engineers.

The branch will cover Arizona, California, Nevada, Oregon, Washington and Idaho.

## Hussar Electric, Tucson, Appointed by Westinghouse

TUCSON, ARIZ.—Westinghouse Electric Corp. has appointed the Hussar Electric Supply Co., Inc., 103 N. Park Ave., as an agent and distributor for its line of industrial apparatus.

Hussar will handle the full Westinghouse line of motors, switchgear, controls and industrial and commercial lighting in the Arizona counties of Santa Cruz, Cochise, Pima, Yuma, Pinale and Graham.

## NW Dairy Firm Merger

PORLAND—Sunny Brook Farms Milk and Ice Cream Co. has merged with Foremost Dairies, San Francisco, one of the nation's largest dairy products firms. The Portland firm recently completed an \$800,000 dairy products plant at N. E. 85th Ave. and Halsey St.



Other Miller welders in this series include:

**DA-300-L BIG RIG**  
Four-in-One:  
DC arc welder; DC AC welder;  
10 KW AC power plant; 1 KW  
DC while welding

**D-250-L ROUSTABOUT**  
Three-in-One:  
DC arc welder; 10 KW AC power  
plant; 1 KW DC while welding

**D-250-W ROUGHNECK**  
Two-in-One:  
DC arc welder; 1 KW DC while  
welding

# miller

# FIVE IN ONE

## FIREBALL

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1. AC welder for metallic arc welding
2. DC welder for metallic arc welding
3. AC or DC welder for TIG welding
4. A 10 KW, 115/230v single phase 60 cycle power plant
5. 1 KW of DC while welding

The DAH-350-L Fireball, driven by Hercules 32 hp engine, is another Miller FIRST, offers both a-c and d-c for metallic arc or TIG welding with three separate a-c and d-c amperage ranges for each.

There's continuous high frequency for a-c TIG welding with choice of "start only" or constant high frequency for d-c TIG work.

Standard equipment includes built-in high frequency stabilizer, polarity switch, power supply for water coolant system, and automatic inert gas control panel with solenoid valve and post flow timer. Trailers are available for welder only or for welder with coolant system and gas cylinders.

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WELDING RANGE	Metallic Arc	Tungsten Arc
35-100 Amps AC	35-75 Amps AC	
65-160 Amps AC	65-160 Amps AC	
110-400 Amps AC	150-375 Amps AC	
35-80 Amps DC	35-100 Amps DC	
75-175 Amps DC	85-225 Amps DC	
125-350 Amps DC	170-375 Amps DC	
RATED OUTPUT	250 Amps Tungsten Arc, 100% Duty Cycle DC 300 Amps Tungsten Arc, 100% Duty Cycle AC	
CURRENT ADJUSTMENT STEPS		Infinite
MAXIMUM O.C.V.		72 Volts DC 80 Volts AC
1 KW DC AUXILIARY POWER		115 Volts
AC GENERATOR OUTPUT		10 KW
OUTPUT VOLTAGE	115/230 Volt, 1 Phase, 60 Cycle	

Complete specifications on these welders will be sent promptly upon request.

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## E. F. Houghton Expands Facilities in the West

SOUTH SAN FRANCISCO—Expansion of its Western operations has been announced by E. F. Houghton & Co., Philadelphia, following its purchase of an industrial site and buildings at 54 Tanforan Avenue. The firm, which bought the facilities from American Brake Shoe Co., plans to move from 1500 Davidson Ave. into its new oil compounding and manufacturing plant late this year.

According to the firm, installation of necessary processing equipment will be completed this fall. New construction for the expansion project includes an office addition for the plant and for Western Division sales headquarters, plus a chemical control laboratory. The new lab will be triple the size of the present one, as will the large tank farm for storage of Houghton's industrial oil and chemical products.

### Pyromet to Build \$250,000 Plant in San Carlos

SAN CARLOS, CALIF.—Pyromet Company starts construction this month on a \$250,000 production plant and offices at Industrial Way and San Carlos Ave. Early in 1960 the brazing and heat treating firm will move to the new facility from its present quarters at 429 S. Canal St., South San Francisco.

Special production equipment at the new 22,000-sq. ft. facility will include a bell furnace for dry hydrogen brazing, and a Pyromet-developed high-vacuum furnace. A metallurgical laboratory will be provided for the company's growing research and development program.

### Howard Supply Named Bethlehem Distributor

LOS ANGELES—Howard Supply Co. has been appointed by Bethlehem Steel Co. as California distributor for its oil field sucker rods. The firm will handle the rods, plus Bethlehem's petroleum pumping units and piston utility pumps from its six branch offices and its main office at 5125 S. Santa Fe Ave., Vernon.

### Hewlett-Packard Purchase

PALO ALTO, CALIF.—Hewlett-Packard Co., electronic equipment manufacturer, has acquired Boonton Radio Corp., of Boonton, N. J., which produces signal generator and similar instruments.

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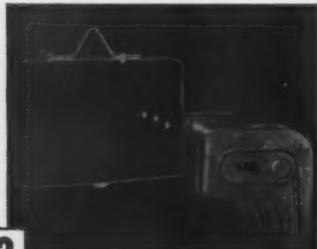
**1**

**SIMPLY INSERT THE "POP" RIVET INTO THE RIVET GUN.** Hand operated or power guns are available depending upon your needs. "POP" Rivets can be used to fasten all materials . . . metals to metals, metals to plastics, and plastics to plastics.



**2**

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**3**

**AND SQUEEZE.** The "POP" rivet "pops" into place. Being a hollow "blind" rivet, the "POP" Rivet clinches from the head side only . . . you can place the rivet anywhere . . . even in those hidden areas because "back-up or bucking" is eliminated.

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120

## WESCON Pictorial Review

**SAN FRANCISCO**—The missile-like pace of the Electronics Industry paused for a moment for review at the Cow Palace. The occasion was the Western Electronic Show and Convention, August 18-21.

Over 30,000 engineers and others associated with the industry watched demonstrations of the latest electronic devices and noted some of the recent advances in this science. There was plenty to see as over 800 exhibitors displayed in 960 booths. Below are some of the booths and the equipment displayed:



Varian Associates exhibited a wide range of microwave tubes—Klystrons, large and small—water loads and statos, high vacuum products and graphic recorders. Here, Varian engineer poses with a large tube used in missiles.



Digital frequency meters; time interval meters; transistorized electronic counters; digital voltmeters; data converters were among products shown at the Beckman/Berkeley Division. Herman A. Neidhart is demonstrating one of the new counters to spectators.



A 6-in. high vacuum pumping system was prominently displayed at the Kinney Mfg. Div. of The New York Air Brake Co. booth. At left is Rufus Thayer, King Knight Co. (Kinney representative in Northern Calif.) and Roy A. Waltman, Western District Manager of the Kinney Mfg. Div.

Fixed and variable resistors, precision film resistors, ceramic capacitors and other electronic components were exhibited at the Allen-Bradley Co. booth. Left to right: Irvin Aaron (distributor); George W. Vater, H. H. Zabel, and Leonard W. Beaudoin, all of Allen-Bradley Co.





"The World's strongest bolt", and other miniature and lightweight fasteners for electronic equipment were shown by the Standard Pressed Steel Co. Left to right: Charles Betz, Don Anderson, Al Scott, George Barnett.



At far right, Russel J. Bamberger, Division Manager of Wales-Strippit Inc., was as interested as the rest of the spectators in a demonstration of the Wales Strippit fabricator and duplicator for producing electronic cabinets and cold punching of printed circuits.



Examples of brazing and heat treating Space Age components are shown here by Robert C. Bertossa, Pyromet Co. The firm specializes in Hydrogen and Vacuum brazing.

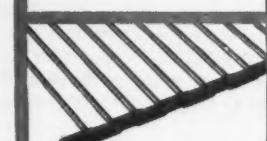
Nameplates, dials, special electronic markers were on display at the W. H. Brady Co. booth. That's Fred C. Klusman (left) and W. S. Aldrich looking over some sample labels.



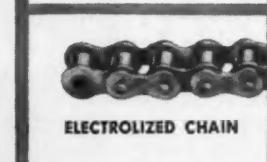
STAINLESS STEEL ROLLER CHAIN



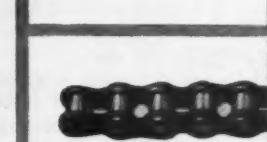
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There's Atlas Stainless Steel Flat-Veyor that conveys bottles and products of all types smoother, is corrosion free and longer lasting. Just one of the many Atlas Chains to do the right job in moving products or transmitting power.

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*John* **BEAN**  
Pump

One of our first lines of defense is the DEW line's Nike-Hercules installations. These installations are usually located in remote, elevated areas where the problem of supplying water for operation personnel is a major factor in maintaining these sites. The John Bean High Pressure Pumps were chosen for this important task because of their rugged dependability and their ability to pump water at high pressure, through long pipe lines extending over a thousand feet in elevation from source to supply.

#### Pumping Problem?

Send us the details on your "high pressure" pumping problem. We'll be glad to send you complete recommendations.

NEW and BIGGER models

75th ANNIVERSARY



Putting Ideas to Work  
**John**  
**Bean**  
Division

INDUSTRIAL PUMPS

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122

## Contract News for the West

SANTA MONICA—A \$15,000,000 Navy contract for its AJB-3 all-altitude flight director and low altitude bombing system awarded to *Lear, Incorporated*, highlights the news of military and other contracts announced recently by firms in the West. Orders to two Lockheed concerns, Royal Industries, Inc., Kaiser Steel, B-J Electronics, Aerojet-General, Summers Gyroscope, and AiResearch Mfg. in Phoenix are also in the million-dollar-or-more class.

One Lockheed contract, to *Lockheed Aircraft Service, Inc.*, was for approximately \$2,800,000, from Pan American for conversion of 10 DC-7's to cargo aircraft; the second one, for \$5,000,000, was from the Navy to *Lockheed Aircraft Corporation's* California Division for a modernization program for WV-2 Warning Star radar sentry planes.

*Kaiser Steel's* \$3,898,999 contract was to its fabricating division for design, fabrication and installation of a 305-ft. mobile service tower for the SATURN missile project at Cape Canaveral.

*B-J Electronics'* contract was a \$1,400,000 Air Force order for signal generators; *Aerojet-General's*, a \$4,900,000 Army Signal Corps order for surveillance drone systems; *Summers'*, orders totaling over \$1,750,000 from

*McDonnell Aircraft* for additional guidance sub-systems and parts for the Quail missile; *Royal Industries, Inc.*, a \$1,200,000 contract from *Hiller Aircraft* for power transmission mechanism for the H-23D Army-Navy helicopter; and for *AiResearch*, \$1,000,000 in contracts from the Martin Co. for valves and regulators for the Titan ICBM.

Other Western firms that received contracts recently include:

*Servomechanisms, Inc.*, \$485,345, from Lockheed for production of True Airspeed Computers; *Telecomputing Corp.*, \$330,000 from the Navy's Aviation Supply office for complex radar test equipment and parts; *Parabam, Inc.*, orders for \$264,000, for astrodome shelters; *Rantec Corp.*, \$65,000 contract from Wright Air Development Center, Dayton, O., for development of high altitude rocket antenna systems; and *Airline Welding and Engineering*, \$23,000 NASA contract for welding positioners.

Also the recipients of contracts in the last few weeks, as reported to WESTERN INDUSTRY, were *Weber Aircraft Corp.*, *Altamir Corp.* (through its new *Twigg Industries Division*) *Fluor Maintenance, Inc.*, *The Rucker Co.*, *General Controls Co.*, and *Hirt Combustion Engineers*.

### Solvent Recovery Plant Completed in Seattle

SEATTLE—The Preservative Paint Co. has announced completion of a solvent recovery plant at 740 Lucile St. The new facility, located on a 20,000-sq. ft. tract, is a continuous process vacuum distillation plant with a capacity of 8,500 gals. per day.

Designed to recover waste solvents with a boiling range of 100-550 F., the plant is equipped with five processing tanks, two vacuum stills and facilities for neutralizing and stabilizing recovered solvents.

### Aeroproducts Firm Merges with Pacific Scientific

LOS ANGELES—Merger of Pacific Scientific Aeroproducts into the Pacific Scientific Co. has been announced by Decker G. McAllister, president of the two firms.

The aeroproducts firm will continue all manufacturing operations at its Anaheim plant which produces precision slip rings, relays, tensiometers and safety equipment for the aircraft-missile industry.

Pacific Scientific's activities include

manufacture of industrial heat treating furnaces and related equipment.

### Stauffer to Build Thiol Plant in Henderson, Nev.

HENDERSON, NEV.—A 50% increase in thiol capacity is planned by Stauffer Chemical Co. with construction of a new thiol (p-chlorothiophenol) plant here. Completion is scheduled for January.

The new plant, to be based on a process developed by the Stauffer research laboratories at Richmond, Calif., will permit the firm to integrate and expand its output of trithion, an insecticide-miticide in which thiol is the principal intermediate. Trithion is produced here.

### Grain Processing Facility

TOPPENISH, WASH.—A new concern, scheduled to be in operation here soon, is Grain Dryers and Storage, Inc., located on South Division Street. The \$140,000 enterprise for custom processing of corn will have a 15,400-sq. ft. warehouse for storage of 10,000 tons of corn.

# HUB CITY

**Model 99—EXTRA HEAVY DUTY** 115 H.P. capacity. Choice of 40 to 6, 37 to 7 or 53 to 8 gear ratios. Totally enclosed cast iron gear case. Ring gear carrier and pinion mounted on Timken bearings; spring loaded grease seals. Four tapped mounting holes on both sides of case. Shipping weight, 135 lbs.

**Model 77—HEAVY DUTY** 85 H.P. capacity. Adaptable to any application requiring angle drive with high torque output with moderate speed reduction. 3.77 to 1 ratio automotive type ring gear and pinion. Similar in design to Model 99. Shipping weight, 85 lbs.

**Model 88—STANDARD DUTY** 65 H.P. capacity. Gear ratios of 1:1, 1½:1, 2:1 and 3:1. Mounting holes both top and bottom for convenience and reversal of rotation if desired. Shipping weight, 90 lbs.

**Model 66—UTILITY DUTY** 40 H.P. capacity. Gear ratios of 1:1, 1½:1, 2:1. Mounting holes both top and bottom. Shipping weight, 50 lbs.

**NEW MODEL 44**—Designed for either speed up or reduction drive in line without changing direction of rotation. Available with two output shafts. Totally enclosed cast iron case. High speed roller chain and sprockets run in constant oil bath. Both shafts equipped with Timken roller bearings in adjustable housings.

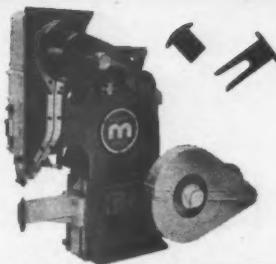
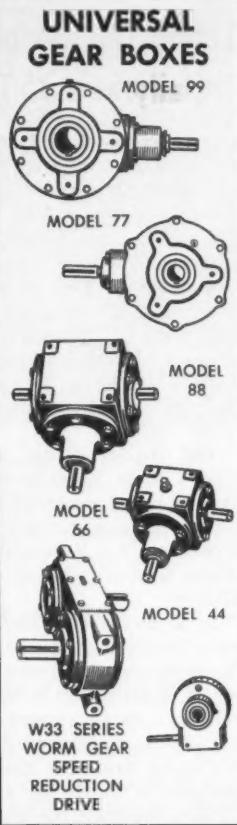
**W33 SERIES**—Worm Gear Speed Reduction Unit is adaptable for applications requiring high torque, slow RPM output with low torque, high RPM input.

**UNIVERSAL ADAPTABILITY.** The position of Hub City Gear Boxes can, for many installations, be reversed in either a horizontal or vertical position in order to obtain clock-wise or counter clock-wise rotation of input and output shafts without ordering special boxes or changing the location of gears. MORE APPLICATION FROM MINIMUM INVENTORY.

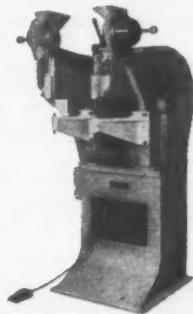
**GRETHER & GRETHER, Western Factory Sales Representatives**  
P.O. Box 47, Stockton, California  
P.O. Box 1036, Perry Annex, Whittier, California  
or write for complete specifications to:

**HUB CITY IRON CO., Aberdeen, South Dakota**

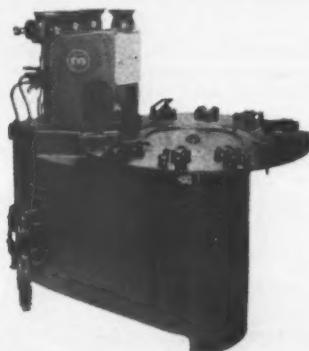
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Complete Line of  
**AUTOMATIC RIVETERS**



Can be adapted to solve nearly every fastening and assembly problem. For the answers to assembly problems...

get in touch with Milford first!

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1180 AUZERAIS AVENUE, SAN JOSE 26, CALIFORNIA**



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for conveyor jobs

STANDARD for light, non-abrasive, grease-free products, cans, bottles, packages.

OIL-EX resists oil, grease, water, steam, heat, acids. A tough belt that withstands severe abrasion.

PERMA-CLEAT belts will carry products up steep inclines better and faster.

**TON-TEX CONVEYOR AND  
TRANSMISSION BELTING**

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WESTERN INDUSTRY/SEPTEMBER 1959

MILFORD, CONNECTICUT • HATBORO, PENNA.  
ELYRIA, OHIO • AURORA, ILL. • NORWALK, CALIF.

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123



# LUBRIPLATE No 630-AA IS PRACTICALLY A UNIVERSAL LUBRICANT

—says

THE SPOKANE PORTLAND CEMENT CO.

"With the introduction of LUBRIPLATE No. 630-AA, we were able to satisfy all our needs for solid type lubricants with only two LUBRIPLATE Products. LUBRIPLATE No. 630-AA might almost be considered a universal lubricant. Furthermore, it has effected marked savings in both lubricants and labor!"

**REGARDLESS OF THE SIZE AND  
TYPE OF YOUR MACHINERY,  
LUBRIPLATE GREASE AND  
FLUID TYPE LUBRICANTS WILL  
IMPROVE ITS OPERATION AND  
REDUCE MAINTENANCE COSTS.**

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



... for more details, circle No. 74

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## Liquid Gas Output of LA NCG Plant is 35 Tons Daily

LOS ANGELES—To help meet the need for great quantities of gases required by industrial firms in the West, the National Cylinder Gas Division of Chemitron Corp. recently put into operation a new plant that is producing more than 35 tons of liquid oxygen, nitrogen and argon each day. The new plant is adjacent to NCG facilities on Alameda Street that were already producing oxygen, nitrogen, hydrogen and acetylene in gaseous form.

The liquefaction, according to NCG's plant superintendent E. G. Bolene, is accomplished by compressing air to high pressure, cooling and expanding it. Rectification, he explains, is purification by repeated distillation.

In a 56-ft.-high fractionating column dominating the new NCG plant, the liquid runs down over a large number of fractionation trays and the vapor rises countercurrent through the trays. When the vapor bubbles through the liquid, heat and material are exchanged in order to achieve equilibrium, whereby the rising vapor is progressively enriched with the more volatile, or rapidly evaporating, components and the descending liquid is enriched with the less volatile components.

When separated, at temperatures about 300 deg. below zero, the liquid gases can be stored in the plant's four vacuum tanks or delivered throughout the area by a fleet of NCG transport trucks.

Other NCG gas-producing plants in the West are at San Leandro, Calif., Portland, Oregon, Seattle, Wash., and Salt Lake City, Utah.

### Westinghouse Apparatus Unit Moves in Portland

PORLAND — Westinghouse Electric Corp. on Sept. 1 moved the Oregon headquarters office of its apparatus division to larger quarters at 1414 N. E. Grand Avenue.

The new building, located in Lloyd Center, will house sales offices and the engineering and service department. The manufacturing and repair, X-ray and elevator divisions will remain at 614 N. Tillamook St.

### Telemeter Magnetics, Inc. Gets Additional Space

LOS ANGELES—Two buildings at 9937-41 Jefferson Blvd., Culver City, have been leased by Telemeter Magnetics,

Inc., to meet current expansion needs. The new facility, covering over 70,000 sq. ft., will be occupied in October.

Telemeter's present facility at 2250 S. Cotner Ave. in West Los Angeles will be retained by the company's components division for manufacture of ferrite cores, storage arrays and electronic components.

### Four Distributors Named by David Brown, Inc.

SAN LEANDRO, CALIF.—David Brown, Inc., recently named four distributors in the Western states for its speed reducers, complete drives and other products.

In the Bay Area, Monarch Supply Corp. of San Leandro and San Jose will represent the gear concern for 10 counties in the general San Francisco area. In Utah and adjacent areas of Idaho, Wyoming and Nevada, the new distributor is Bearing Engineering & Sales Co., Inc., 756 S. 2nd St. W., Salt Lake City.

New Mexico distributor is Montezuma Bearing Co., 1413 First St. N. W., Albuquerque, and in northwestern California, Industrial Electric Service Co., Inc., 960 Fourth St., Arcata, will distribute the David Brown products.

### Kimball Mfg. Is No Longer Bristol-Myers Subsidiary

SAN RAFAEL, CALIF.—Kimball Mfg. Corp., which has been a subsidiary of Bristol-Myers Co., has been sold to a new corporation formed by William R. Kimball, president of the Kimball concern. The Marin county firm produces industrial molding as well as fiberglass water skis and decorative giftwares.

### New Electronics Firm

PALO ALTO, CALIF.—Utek Corp. is a new electronic firm that specializes in production and development of electronic vacuum pumps and related equipment. Headed by Lewis D. Hall, the concern is located at 920 Commercial St.

### Hamilton Rep in LA

LOS ANGELES—Hamilton Division of Baldwin-Lima-Hamilton Corp. has appointed Seaboard Machinery Co., 3212 E. Olympic Blvd., as a Southern California representative for Hamilton mechanical and hydraulic presses.

### Bay Area Industrial Site

REDWOOD CITY, CALIF.—Price Industrial Park will be the name for a new project being planned for this San Francisco peninsula area.

# NOW! VIKING PUMPS

in a complete line of

## ALLOYS

Stainless Steel  
Monel  
Steel-Nickel  
Nodular Iron  
Ni-Resist  
White Bronze  
and many others

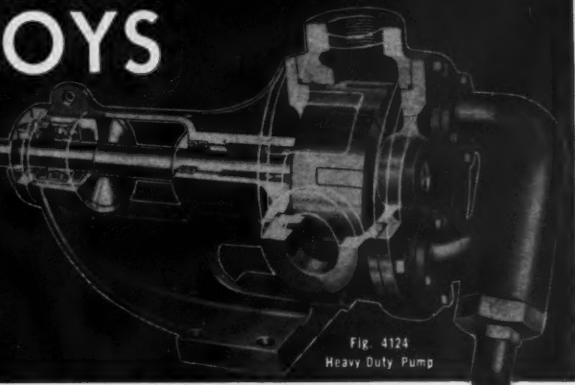


Fig. 4124  
Heavy Duty Pump

Have problems of handling liquids and semi-solids of a corrosive nature, or where contamination is not permitted? Viking Rotary Pumps made of alloys to fit the need, will answer those pumping problems.

**Send your pumping problem to Viking today and ask for Alloy Pump catalog MA.**

VIKING — The Leader  
not a follower  
in Rotary Pumps



### VIKING PUMP COMPANY

Cedar Falls, Iowa, U.S.A. In Canada, it's "ROTO-KING" pumps  
Pacific Coast Distributors: Viking Pump Company of Los Angeles,  
4432 Long Beach Ave., Los Angeles, Calif.; DeLaval Pacific Co.,  
201 E. Millbrae Ave., Millbrae, Calif.

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**PERHAPS you weren't thinking of a LATHE ...**

**WELL...**

in that case **HAVEN MACHINERY & SUPPLY CO.**  
has all kinds of other —

#### MACHINE TOOLS ...

- Sheldon lathes
- U.S. Burke milling machines
- Marvel hacksaws
- Wells metal bandsaws
- Delta metalworking machines
- Many other lines

#### INDUSTRIAL SUPPLIES ...

- Disston metal bands, hacksaw blades, files
- Standard cutting tools
- Simonds grinding wheels
- Nicholson files and burrs
- 3M abrasives
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MACHINERY & SUPPLY CO.

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- Oakland, 950 E. 14th St., TE 4-9110
- Sacramento, 21st & J Sts., GI 3-2003
- San Jose, 859 W. Julian St., CY 5-1344
- Fresno, 2450 Inyo St., AM 4-5009



Sheldon Precision Lathe . . . big 15" swing, big 1 1/2" spindle capacity, and low price are its features . . . plus exclusive, modern, completely enclosed headstock, "work-holding only" spindle, high-speed, high-torque drive.



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WESTERN INDUSTRY/SEPTEMBER 1959

Another **PLUS** value...

## TAKES MORE LOAD, LONGER

Shafer Self-Aligning Roller Bearings, combining the low rolling friction of a ball with the greater load-carrying capacity of a roller, take severe loads easier, last longer. The inner race is a segment of a true sphere.

Normal loads are carried on approximately half of the center contact area of the concave rollers, reducing friction. Under heavy loads, case hardened races and rollers compress, increasing load-bearing surfaces. This provides exceptionally high reserve to handle shock loads and severe vibration.

This is also the right roller-race combination to handle thrust, radial or angular loads, or all even under misalignment.

As a result, Shafer Bearings assure greater stamina, longer life for your equipment. See your nearby distributor, or write for latest catalog.

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SELF-ALIGNING  
ROLLER-BEARINGS

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1181 Sheppard Ave. East, Toronto)

- Please send latest Shafer Roller Bearing Catalog.
- Have a Rex man call.

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Company.....

Address.....

City..... Zone..... State.....

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# POWER TRANSMISSION SPECIALISTS

The Power Transmission Equipment Company and its representatives are, as the name implies, specialists in the vast and important field of Power Transmission. Over 75 years of technical and practical experience is available to you. Our stocks, sales efforts, and a complete gear and machine shop are available along with our service of "10,000 Minutes A Week." We will welcome your inquiries with prompt, courteous service from our two West Coast stores.

*Representing:*

**DIAMOND CHAIN CO.**

Roller & Conveyor Chains  
Stock & Made-To-Order Sprockets  
"Flexible Couplings"  
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**DODGE  
MANUFACTURING CO.**

"Taperlock" Sheaves & Sprockets  
Dodge-Timken Pillow Blocks  
Rolling Grip and  
Diamond D Clutches

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"Cog" & Thorobred "V" Belts  
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**JEFFREY**

Chains & Transmission Machinery  
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**EATON DYNA-TORQ**

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**U. S. ELECTRICAL MOTORS**

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**MACHINE SHOP FACILITIES**  
Made-To-Order Gears & Sprockets  
Special Shafts Keyseated  
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EQUIPMENT CO.**

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LO. 4-2551

109 23rd St.  
Bakersfield, Calif.  
FAirview 5-8601

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See listing in Directory Section

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## Vacuum Melting Furnace for Precision Castparts

PORTLAND — A new vacuum melting furnace at the plant of Precision Castparts Corp. here will provide the only facility west of Chicago for production of investment castings by the vacuum remelting process, according to K. H. Pierce, vice president of the Portland firm.

The new installation, which went into production last month, also extends the firm's capabilities for production of castings of iron, nickel, cobalt and other alloys.

## Parker Aircraft Breaks Ground for New Building

LOS ANGELES—Parker Aircraft Co. broke ground recently for a new building that will increase its plant space to some 200,000 sq. ft.

The 40,000-sq. ft. structure is located on a 10-acre site at 5827 W. Century Blvd. Completion is scheduled in about three months.

## Calaveras Installs New Bulk Cement Facilities

SAN ANDREAS, CALIF.—With addition of new cement bulk facilities the Calaveras Cement Co. plant here has a

**ENGINEERED  
WOOD  
PRODUCTS**  
**Corrosion  
Proof**

*Windeler*

*Built*

**Wood Tanks**

**Cooling Towers**

**Custom Millwork**

**Scrubbing Towers**

for Smog Control

"OUR 74th YEAR"



GEO. WINDELER  
COMPANY, LTD.  
VALENCIA 4-1841  
2225 JERROLD AVE.  
SAN FRANCISCO 24,  
CALIFORNIA

... for more details, circle No. 79

system that will permit simultaneous loading of three bulk cement trucks, two sack cement trucks and a railroad car.

Two 2700-bbl. steel tanks are mounted above a 10 x 60-ft. Fairbanks-Morse truck scale so that cement can be rapidly discharged by gravity to a bulk truck waiting on the scale.

## Linde Co. Hydrogen Plant Slated in Torrance, Calif.

TORRANCE, CALIF.—Groundbreaking will take place Sept. 15 for a new liquid hydrogen plant for the Linde Co. Division of Union Carbide Corp.

The plant will be located on Hawthorne Ave., adjacent to the Union Carbide Chemicals plant. When completed in May, 1960, the plant will deliver 3,300,000 lb. of liquid hydrogen a year to the National Aeronautical and Space Administration (NASA).

Bulk volume of small as well as large quantities of the high energy liquid gas will be available to other users in the West.

## Budd Radiation Unit for Shell Chemical

TORRANCE, CALIF.—A newly-developed radiation unit, made by the Nuclear Systems Division of the Budd Co., is being installed at the synthetic rubber research center of Shell Chemical Corp. here.

Largest irradiation device of this type, it will be used to start and modify chemical reactions in improving rubber, plastics and radiation resistance products for atomic powered units.

## ASCO Spokane Distributor

SPOKANE, WASH.—Bitco, Inc., E. 4115 Trent, has been named a stocking distributor for Asco solenoid valves made by Automatic Switch Co., Florham Park, N. J. Standard Electric Sales, 204 W. Lucile St., Seattle, is the area's authorized Asco representative.

## Tucson Electronics Firm

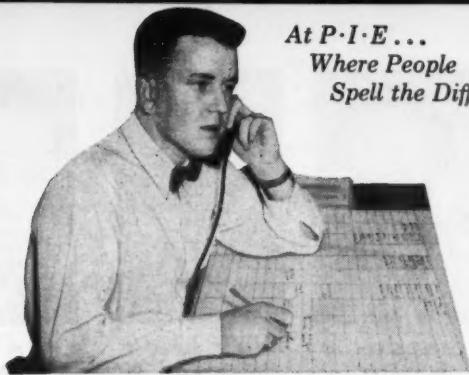
TUCSON, ARIZ.—Production of plastic components for electronic equipment is scheduled to be underway this month at the new plant of J-B Electronics. Jack Nancarrow and Brian Wainwright are principals in the new firm.

## Altamil Purchases Twigg

EL SEGUNDO, CALIF.—Purchase of the Twigg Industries Division of the Pryor Manufacturing Co. has been announced by Altamil Corp., metalworking subcontractor for the aircraft-missile industry.

WESTERN INDUSTRY/SEPTEMBER 1959

See listing in Directory Section →



*At P·I·E ...  
Where People  
Spell the Difference!*

*He has a fleet in the palm of his hand to  
Take a Big Load off Your Mind*

As Commodore of the Pick-up Fleet, P·I·E's City Dispatcher knows the exact location of every truck—every hour. Your call comes in—he radios the driver nearest your plant to take the load off your mind. No lost time—no lost motion. P·I·E has the latest electronic equipment to direct the fleet but it takes more than that—it takes men—keen men like Bill Patt in Chicago.

At P·I·E... people spell the difference!



### PACIFIC INTERMOUNTAIN EXPRESS

TERMINALS & OFFICES IN PRINCIPAL CITIES. GENERAL OFFICES P·I·E  
BLDG., 14TH & CLAY STREETS, P.O. BOX 958, OAKLAND 4, CALIFORNIA

**P·I·E Delivers the Goods...in good shape...in good time!**  
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# Tough Tape

for strapping  
and bundling  
uses



### SHUFORD'S SHURTAPE® GS-23

Here's a tape that ranks at the top on all counts! Has high shear resistance and extremely high tensile strength due to bi-lateral woven glass in the backing. Features high adhesion, too!

Shuford's SHURTAPE GS-23, with rubber impregnated flat-back paper backing, reinforced with bi-lateral woven glass strength member, is a tape that can take it! Use it for packaging and sealing, bundling and for protective purposes.

It's a low-stretch, thin and flexible, glossy finish tape that resists abrasion, drying and cracking. Also, SHURTAPE GS-23 resists water, oil and solvents.

Ask your  
**ZELLERBACH PAPER COMPANY**  
Representative  
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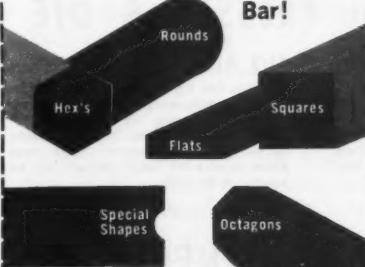
CLOTHES LINES \* TWINES  
PRESSURE-SENSITIVE PAPER TAPES  
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### -SIERRA- SHAPES

To Meet Your Every Need in  
Cold Drawn Bar!



#### Highest Quality To Meet Your Strictest Specifications

- Complete Metallurgical Service
- Complete Engineering Service
- Production Flexibility • Fast Delivery

Available to You Through Your Nearby  
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Los Angeles 22  
Raymond 3-6431



of the Northwest  
6600 Airport Way,  
Seattle  
Parkway 2-5961

— Western Steel for Western Industry —

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## westerners at work

■ *M. A. Gudman*, formerly comptroller, and *Kurt Kuhlmann*, general plant superintendent, both have been named vice presidents by Industrial Air Products, Portland. Gudman was formerly with White Stag and the Columbia River Packers Association. Kuhlmann, who will direct all of the firm's production, joined the firm from American Messer Co., New York.



R. E. Halloran  
Babcock & Wilcox



Ray Green  
Green-Penny



R. F. Moody  
Hyster



J. M. Bell  
Russell, Burdsall & Ward

■ *E. F. Crotty* is the new Northern California district engineer for Torrington Co., Torrington, Conn. His headquarters are in San Francisco at 2255 Palou St.

■ *Ray E. Green* has been appointed vice president of the Green-Penny Co., West Coast material handling firm. Associated with the company for seven years, Green has an extensive background in engineering and sales. He succeeds *Elmer Green*, who is retiring from active management in the firm. *John Kehres* will continue in his position as sales manager of Green-Penny, which is headed by *Tom Penny*.

■ *Robert F. Moody* has been promoted from sales manager of Hyster Company's industrial truck division to be general sales manager of the Portland company. Moody has been with

the firm 12 years in various capacities. A former Portland resident, Moody moved September 1 to Portland from Danville, Ill., to take over supervision of sales promotion, merchandise and special products engineering departments of the company. Hyster also reports appointment of *Fred Welch* as general parts and service manager. Welch, who has been with the firm for 11 years, will also assume full responsibility for operating the eight company-owned retail dealerships throughout the country.

■ *Walter F. Nesche* has been appointed by Rust-Oleum Mfg. Co. as an associate representative, covering the San Francisco Bay Area and the Salinas Valley. Formerly Mid-Western District Sales Manager for the Armour Adhesive Division, Nesche replaces *William R. Broen* who has been transferred to Los Angeles as an associate representative.

### KUX POWDERED METAL PRESSES & DIE CASTING MACHINES

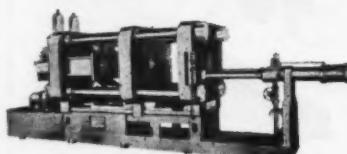


#### KUX Powdered Metal Presses

The most complete line of powdered metal presses from 10 tons to 500 tons—die fill up to 15"—hydraulic or mechanical models—completely automatic, push buttons operate machines continuously or through a single cycle with an automatic stop position. Kux also makes presses for sizing and coining. Ask for Bulletin #FM 4100-599.

#### KUX Die Casting Machines

Complete line from 50 tons to 2000 tons. Locking pressure—hydraulic operated machines for lead, zinc, tin, aluminum, magnesium, brass die casting. A size and model for every need. All machines strain gauge proven assuring full locking pressure. Ask for Bulletin #FM 599K.



### FERNHOLTZ MACHINERY CO.

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WESTERN INDUSTRY/SEPTEMBER 1959

■ **E. O. Williams**, vice president and director of Victor Equipment Co., will now have overall supervision of the firm's entire Southwestern District sales division, including responsibility for new business and establishing new branches. **F. V. McGinley** has been promoted from assistant branch manager to branch manager in Los Angeles and assistant manager of the division. Williams, who has been with Victor since 1929, will cover Southern Nevada, Arizona and Southern California from San Diego to San Luis Obispo. McGinley, who will be taking over many of Williams' detail duties, has been with the welding concern for 22 years.

■ **Robert E. Halloran** has been named to succeed **H. F. Lefferty** as Pacific Coast sales manager of the Babcock & Wilcox Co. Tubular Products Division. Lefferty is retiring after more than 40 years with the Beaver Falls, Pa., firm. Halloran, who will make his headquarters at the Los Angeles district sales office, joined the firm in 1941 and in 1953 was appointed manager of mechanical sales for the division.

■ **Floyd L. Collier** has been appointed Southern California district manager for the Wooldridge Co., industrial sales representatives, Burlingame, Calif. Collier, who will be located in Los Angeles, formerly was with the Construction Division of Harron Rickard & McCone of Southern California, is a graduate of the University of Southern California, and played football for the San Francisco Forty Niners.

■ **James M. Bell** has been named to a new position, assistant vice president of sales in charge of the Western division of Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y. Pacific Coast sales manager since July, 1954, Bell will continue to be headquartered in Los Angeles, heading a sales force that covers 9 Western states, plus Alaska and Hawaii.

■ **Ernest H. Schaper** has been appointed manager of operations for all Kaiser Gypsum Co. plants and facilities, with headquarters in Oakland. The company has also named **John Pooler** and **Paul Franklin** to the newly-created positions of managers of manufacturing. Other appointments made recently are those of **John D. Cassidy** as plant superintendent at St.

Helens, Ore., **Richard C. Crowle** as manager of administration and planning and **Harlan C. Dupois** as an executive assistant to management.

■ **Ted Green** has been selected by Milwaukee Electric Tool Corp., Milwaukee, Wis., as district representative for Colorado, Utah and Wyoming. He will make his headquarters at 8025 W. 9th Ave. in Denver. The firm will continue to maintain service facilities and a limited warehouse stock at Bartell Tool Service in Denver.

■ **Col. Leander M. Harrison** has assumed command of the San Francisco Ordnance District, succeeding **Col. John M. Stark**, who retired from active Army duty Aug. 31. Harrison, headquartered at 1515 Clay St., Oakland, has most recently been in the office of the Chief of Ordnance in Washington, D. C.

■ **Charles S. Cobb Jr.** is the new Los Angeles area agent for Delta Lines, Inc. Associated with the trucking industry for many years, he recently has been assistant to the vice president-operations for Transcon. The Delta terminal in Los Angeles is at 2222 E. 38th St.

■ **E. K. Hubbard** has been appointed by Chicago Pneumatic Tool Co. as manager of the Seattle district. Formerly assistant manager of the company's Dallas sub-branch, Hubbard has been with Chicago Pneumatic since 1937. He succeeds **R. S. McDeth**, who retired recently after 18 years with the firm in the Pacific Northwest.

■ **John Webber** has been appointed vice president-general manager of Goodyear Rubber Co., San Francisco firm that specializes in rubber rolls and other precise industrial rubber products for diverse industries.

## CLASSIFIED SECTION

Space is sold as advertisers' inches. All advertisements in this section are  $\frac{1}{8}$  inch short of contracted space to allow for borders and composition. Rates are \$16.00 a column inch. Copy should be sent in by the 20th of preceding month if proofs are required; by the 25th if no proofs are required.

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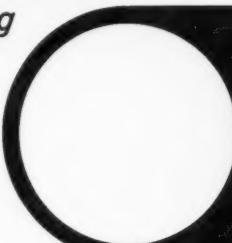
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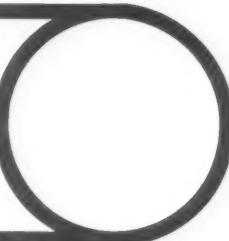


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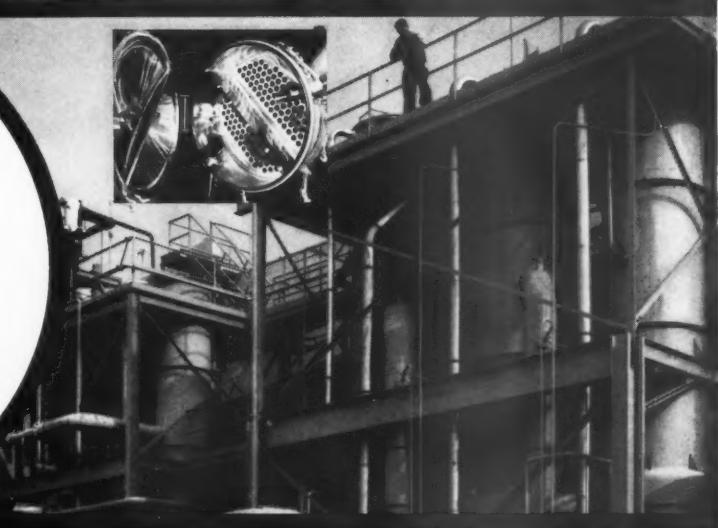
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